INTRODUCTION

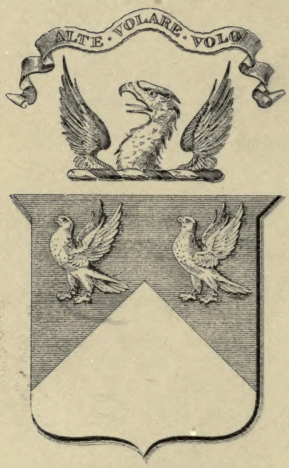
TO THE

STUDY OF ECONOMICS

by

CHARLES JESSE BULLOCK, PH.D.

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INTRODUCTION

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STUDY OF ECONOMICS

BY

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Instructor in Economics in Cornell University



SILVER, BURDETT AND COMPANY
NEW YORK .... BOSTON .... CHICAGO
1897

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1897

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HENRY MORSE STEPHENS

University Press:
John Wilson and Son, Cambridge, U.S.A.

PREFACE.

THIS work is designed for an introductory text-book of economic science. The first three chapters aim to familiarize the student with an orderly treatment of some leading facts in the economic history of the United States before the study of economic theory is commenced. Throughout the book economic principles are discussed with special reference to American conditions, and their workings are illustrated by frequent allusions to American experience.

Some of the chapters treat of topics that are extremely difficult. In such cases no attempt has been made to secure a false appearance of simplicity. The subject of public finance has been only incidentally touched upon. The author considers it impossible to discuss taxation satisfactorily without studying public expenditures also. To do this would have required more space than could be allotted to that subject.

When many important points of economic theory are unsettled, as is certainly the case at the present time, the preparation of a text-book is not an easy task. The author believes that it is neither desirable nor possible to introduce the beginner to many controversies

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on fundamental points of theory. For this reason he has been obliged oftentimes to present his own views much more dogmatically than he would desire to do under other circumstances. On practical problems, however, such as bimetallism and monopolies, where weight of opinion is nearly evenly balanced, every effort has been made to present both sides of the controversies.

The author has received invaluable assistance in the preparation of this work. Special acknowledgment should be made to Professor Charles H. Hull, of Cornell University, to whose suggestions and criticisms this book owes much of whatever value it may have. The thanks of the author are due especially to his wife, who prepared nearly all the manuscript for the printer, lightening by one half the labor of writing this work.

CHARLES JESSE BULLOCK.

ITHACA, N. Y., April, 1897.

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INTRODUCTION TO ECONOMICS.

CHAPTER I.

INTRODUCTION TO THE ECONOMIC HISTORY OF THE UNITED STATES.

I. Westward Expansion.

§ 1. The English colonies in North America were planted on the mere threshold of a vast territory of continental extent and imperial richness. Resistlessly the line of settlement has been pushed westward until, at the present day, no distinct frontier of unsettled land exists in the United States. This westward expansion of population over a vast area of free land has been the fundamental fact in the economic history of the country, exerting an influence upon almost every phase of its economic life.

Westward movement of population.

§ 2. The colonists of the seventeenth century, advancing through the valleys of the rivers flowing into the Atlantic, pushed their settlements slightly beyond the "fall line," or the point where the first falls obstructed the navigation of the rivers. The frontier of the seventeenth century corresponded roughly with the western border of the Atlantic coast region. From 1700 to 1760 the

The first two stages of westward expansion.

frontier was advanced another stage toward the west. Emigrants gradually followed the rivers that penetrate the Appalachian region, and formed settlements in the table-lands of Pennsylvania, Virginia, and the Carolinas. In New York and New England many settlers pushed toward the interior of those sections. Meanwhile, the eastern or tide water regions became an area of more or less continuous settlement.

The third and fourth stages.

§ 3. The third stage in the advance of the frontier occurred between 1760 and 1790. Settlers moved through the valleys and mountain passes of the Appalachians, and emerged in Tennessee, and Kentucky, and around the upper branches of the Ohio River. Thus the frontier passed over the mountains, while the area of continuous settlements advanced well into the Appalachian region. With the Appalachian mountains once passed, emigrants moved rapidly into the Mississippi Valley. In 1820, Ohio, southern Indiana and southern Illinois, Tennessee, Kentucky, and southeastern Missouri were included within the settled area. West of the Mississippi and along the Great Lakes, a fourth region of frontier existed.

The fifth and sixth stages.

§ 4. From 1820 to 1850 the westward movement of population was very rapid. The construction of the Erie Canal, in 1825, and the use of the steamboat upon the western rivers, facilitated communication with the East, and stimulated the settlement of the Mississippi Valley. By 1850 the frontier was advanced to the eastern boundary

of Kansas and Nebraska, while great states had arisen east of the Mississippi. At the same time a new frontier of settlement was begun in California, Oregon, and Utah. By 1880 the territory intervening between the Kansas-Nebraska and the Pacific frontiers of 1850 had become populated, although somewhat sparsely. In many places frontier conditions still existed, but areas of thicker settlement had so broken into the old Rocky Mountain frontier that a distinct line of frontier no longer existed. The decade from 1880 to 1890 saw almost the complete disappearance of an "American frontier."

§ 5. Up to the present time the economic history of the United States has been marked by a continual westward movement of population over vacant lands. In the future it will be altogether a story of the more complete development of the territory won for the cause of civilization by the labors and privations of the American pioneer. The significance of this movement for westward expansion has been understood by few. For this reason, says Woodrow Wilson, "the history of the country and the ambitions of its people have been deemed both sordid and mean, inspired by nothing better than a desire for the gross comforts of material abundance; and it has been pronounced grotesque that mere bigness and wealth should be put forward as the most prominent grounds for the boast of greatness. The obvious fact is that for the creation of the nation the conquest of her proper territory from Nature was first necessary; and this task, which is hardly yet completed, has been

Significance of westward expansion.

idealized in the popular mind. A bold race has derived inspiration from the size, the difficulty, the danger of the task. Expansion has meant nationalization; nationalization has meant strength and elevation of view."

II. Land Tenures in the United States.

§ 6. Systems of land tenure influence powerfully the economic development of a country. In Europe, the possession of land has often conferred economic superiority and social distinction. In the Middle Ages the large landowners became the feudal rulers of Europe, while the small owners and the landless men were obliged to place themselves under the protection of some feudal lord, in a position of economic and social dependence. In modern Europe the landed aristocracy has lost most of its exclusive political privileges, but retains something of its former social superiority. Land tenures have in most countries remained aristocratic, — that is, such as to perpetuate large estates and to make difficult the growth of a large number of small holdings. Such land tenures keep the mass of the agricultural population of Europe in a position of economic dependence upon the land-owning classes.

The influence of land tenures.

In the United States economic development has taken a different direction. In some colonies efforts were made to create large estates whose proprietors should enjoy special privileges, and various conditions sometimes made it difficult for small proprietors to acquire titles to land.

Tenures in the United States.

But, in the long run, the tendency was toward a popular system of land tenure and land transfer. After the Revolution, practically all traces of aristocratic land laws were swept from the statutes of the states. Small holdings had always been the rule in New England, while large estates became more common as one passed toward the South. These differences had an economic explanation. The more fertile lands of the middle and southern colonies made large farms and plantations profitable economically. On the less fertile soils of New England, smaller farms and a more careful cultivation were an economic necessity. Similar causes explain differences in agricultural tenures that exist in the country at the present day.

§ 7. Since vacant lands abounded, the management and settlement of such public lands became an important problem early in colonial history. The usual outcome was that the people finally secured the right to acquire ownership of the vacant territory by simple methods of registration, and by making a payment that was often nominal. The growth of democracy in the colonies made such a solution inevitable.

Management of public lands.

The War for Independence placed in the control of the United States nearly all the territory now comprised within its limits east of the Mississippi.[1] The territory west of the Alleghanies was ceded to the national government by the

The public domain of the United States.

[1] On the subject of land cessions, see maps in MacCoun, Historical Atlas; Hinsdale, The Old Northwest; Gannett, The Building of a Nation.

states, and became a public domain. In 1785 and 1787 Congress passed ordinances that provided for the administration of the Northwest Territory. These ordinances laid down the lines which the policy of the United States has always followed, in many important features. The lands were divided by a governmental survey into townships six miles square.[1] Entire townships or sections of townships were sold at public sale for not less than a dollar per acre. This system enabled settlers to locate easily in the states north of the Ohio, and consequently the flow of population into the Ohio Valley was very rapid. By several acquisitions the United States extended its territory to the present limits; and the public domain included, at one time and another, 2,889,175 square miles.[2] The thirteen original states, together with Maine, Kentucky, and Texas, were never part of the public domain. Their area is about 699,000 square miles.

Disposal of the public domain.

This vast public domain has been sold at public and at private sale at a common price of $1.25 to $2.50 per acre. Since 1862 a free homestead of not more than one hundred and sixty acres has been granted practically free of charge to every citizen who is the head of a family, or above the age of twenty-one, on condition that he shall actually cultivate the land for five years. Lands valuable for minerals, for timber or stone, for town sites, etc. have

[1] See FISKE, Civil Government, 81–88; HINSDALE, The Old Northwest, 255–279.

[2] For these statistics see DONALDSON, The Public Domain, 10–14; SATO, The Land Question, 21–77.

been sold on special terms. Vast tracts of land have been given away for the purpose of assisting in the construction of railroads and military roads, for the endowment of schools and colleges, and for military bounties to soldiers and sailors. In these ways the larger part of the original domain has passed out of the hands of the United States. In 1894, exclusive of Indian and military reservations, there remained about 850,000 square miles of public domain. To this should be added nearly all of the 577,390 square miles included in the limits of the territory of Alaska. Of the lands that remain, only a small part will be available for agricultural purposes until the arid regions of the West shall be irrigated.

There have been great abuses in the administration of the public domain. Vast tracts of land have been secured by fraud, railroads and other corporations have secured land without fulfilling the conditions upon which the grants were made, while land and timber thieves have supported lobbies at Washington to prevent the passage of laws designed to protect public interests. Yet, in spite of all abuses, millions of settlers have found homes on lands secured from the United States, the resources of the country have been developed, and twenty-seven states, carved out of the public domain, have been admitted to the Union. On the agricultural lands, holdings of moderate size have been the rule; and the public-land states have become composed of a large number of proprietors, not of landlords and tenants.

Result of the public land policy.

III. Growth of Population in the United States.

Statistics of increase of population.

§ 8. During the seventeenth century the population of the English colonies grew quite slowly, but from 1700 to 1775 numbers increased rapidly. Mr. Bancroft estimates the population in 1754 at 1,165,000 whites and 263,000 negroes. In 1775 it had increased to 2,500,000 souls. The English element predominated in most of the colonies at that time, but the population was quite heterogeneous. In New York the Dutch stock prevailed, on the Delaware River there were settlements of Swedes, in Pennsylvania there were many Germans, in the mountainous districts of the Appalachian frontier Scotch-Irish were most numerous, while the southern colonies contained many Huguenots. The First Census of the United States, in 1790, showed the population to be 3,924,214. The subsequent growth of the country is shown in the following table: —

Date of Census.	Population.	Per cent of increase.	Number of inhabitants per sq. mile.
1790	3,929,214		4.89
1800	5,308,483	35.10	6.61
1810	7,239,881	36.38	3.69
1820	9,633,822	33.07	4.76
1830	12,866,020	33.55	6.35
1840	17,069,453	32.67	8.43
1850	23,191,876	35.87	7.93
1860	31,443,321	35.58	10.84
1870	38,558,371	22.63	13.30
1880	50,155,783	30.08	17.29
1890	62,622,250	24.86	21.31

§ 9. The enormous increase of the population of the United States during the last century is due partly to natural increase by a constant excess of births over deaths. From 1700 to 1820 the natural increase was very great, so that population doubled repeatedly in periods of about twenty-five years. This was due to the abundance of fertile land which was usually accessible to every one. Food, clothing, and shelter could be secured very cheaply. An increase of numbers meant not so much an increase of mouths to be fed, as an addition to the productive labor of each family employed upon new land. Under such conditions marriages occurred early, families were large, and the natural increase of numbers was rapid. After 1820 it was noticed that the rate of natural increase began to diminish. This became apparent in the older and more thickly populated regions. In recent times this condition has become very general, as the population of more states has become relatively dense.[1]

Natural increase of population.

§ 10. Immigration has been so large that the smaller rate of natural increase has been less apparent than it would have been otherwise. From 1790 to 1820 immigration was small, less than 250,000 persons coming to this country during that period. Between 1820 and 1850 over 2,400,000 immigrants arrived on our shores, and as many more came

Immigration.

[1] See TUCKER, "Progress of the United States," 89–107, published in 1843, for a discussion of the decreased rate of natural increase. Also read MAYO-SMITH'S "Statistics and Sociology," chaps. v., vi., vii., and viii.

between 1850 and 1860. In the latter year more than thirteen per cent of the total population was estimated to be of foreign birth. After the close of the Civil War immigration assumed larger proportions than ever. The West welcomed immigrants, bureaus were established to aid them, the cost of ocean and land transportation was cheapened, and transportation companies made efforts to obtain passengers from foreign lands. In 1871, 321,350 immigrants came to this country; and in 1882, 788,992 arrived. Since then the annual average has been about half a million. The whole number of immigrants from 1820 to 1894 has been 17,428,000. The Census of 1890 showed that the population of the United States fell into the following groups: —

Native-born whites with native parents . .	34,358,348
Native-born whites with foreign parents .	11,503,675
Foreign-born whites	9,121,867
Colored persons	7,638,360

Formerly, most of the immigrants came from Ireland, England, and Germany. More recently, larger numbers have come from the Scandinavian countries. During the last decade immigration from Ireland has fallen off, while Austria-Hungary, Poland, and Italy have sent vast numbers of immigrants.

Mobility of the population of the United States.

§ 11. The general movement of population has always been westward, on account of the unoccupied lands of the frontier. Not only immigrants, but also many of the native population, have formed this stream of westward migration. No other country of the world has shown, at least in

modern times, an equal amount of internal migration. This mobility of population has diminished the force of all economic shocks. In 1890 it appeared that 21.55 per cent of the native-born inhabitants of the United States were living in a different state from that in which they were born. In 1880 it was shown that only one half of the people of native birth were living in the county where they were born.

§ 12. In progressive countries there has appeared, in modern times, a marked tendency of the population to concentrate in cities. This has been the result of the development of manufactures and commerce, and of the improvement of transportation facilities. The following table shows the growth of that portion of the population of the United States which lives in towns and cities of 8,000 inhabitants and over. In 1790 the number of such towns was six, in 1890 it was four hundred and forty-eight.

Growth of cities.

Census Years.	Population of the United States.	Population of Cities.	Inhabitants of Cities in each 100 of the Total Population.
1790	3,929,214	131,472	3.35
1800	5,308,483	210,873	3.97
1810	7,239,881	356,920	4.93
1820	9,633,822	475,135	4.93
1830	12,866,020	864,509	6.72
1840	17,069,453	1,453,994	8.52
1850	23,191,876	2,897,586	12.49
1860	31,443,321	5,072,256	16.13
1870	38,558,371	8,071,875	20.93
1880	50,155,783	11,318,547	22.57
1890	62,622,250	18,284,385	29.20

A comparison of different sections shows more striking results. In the North Atlantic States 51.81 per cent of the people live in cities. In Massachusetts and New York the numerical increase of the urban population is larger than the total increase of the population of the states, so that there has been an actual depopulation of the rural districts. This concentration of the population in cities is greatest in all the states where manufacturing and commercial interests are most important.

IV. Systems of Labor in the United States.

§ 13. In the original colonies there was a great scarcity of laborers. Small proprietors cultivated their own lands, but on the larger farms and plantations there was great need of additional laborers. This lack was intensified as other industries grew up beside agriculture. To supply this need immigration was encouraged, and various systems of obtaining laborers were developed.

Scarcity of laborers in the colonies.

§ 14. Indentured white servants were found in all the colonies at an early date. They were of three classes. The *first* and principal *class* consisted of free persons who desired to migrate to the colonies, but were unable to pay the expense of transportation thither. They voluntarily contracted with some one in America to place their labor at his disposal for a term of years, in return for his assuming the expense of transporting them to the colonies and supporting them during the stipulated terms of service. The *second class* was made up of

Indentured servants.

English political or criminal offenders, whose labor was sold for a term of years or for life. The *third* and least important *class* was composed of persons in the colonies who were sold into servitude for a term of years, either for criminal offenses or for non-payment of debts. Sometimes orphans were bound out to service in this manner.

This system of indented servitude differed very materially from slavery. The term of service was usually from three to six years. At its close the servant was entirely free. The rights of servants under the contracts were usually safeguarded fairly well. On becoming free, servants often rose in the social scale, even into positions of prominence. Many of them became free laborers, but the majority became landholders and swelled the number of small proprietors.

Character of this system.

Except where slavery assumed greater importance, the larger part of the laboring class of the colonies was composed of servants. In the eighteenth century the system of indented servitude declined in the southern colonies, yet it continued everywhere until the Revolution, when further importations of servants from England became impossible. Thus the supply gradually disappeared by expiration of the terms of service; yet indented servants were found here and there until the present century, when the system was abolished by law in some states. This class of servants had been an important addition to the labor force of all colonies where slavery had not assumed

End of the system.

greater importance. But by 1780, even in the northern states, the system was less profitable to employers, since laborers had become more abundant and it was less desirable to hire workmen for so long a period as six years.

Slavery.

§ 15. Slavery differed from indented servitude in that the master had the legal right of ownership of the person of the slave. In the sixteenth century various European nations entered upon the African slave trade, and introduced slaves into the New World. In 1619 a Dutch ship landed twenty African slaves in Virginia, and soon African slavery was introduced into the English colonies. The English slave trade became very large, and the government fostered it, forcing negroes upon the colonies even in opposition to protests and restrictive legislation. But the profits of the trade were so large that the colonists finally entered upon it. After the Revolution various states restricted this nefarious traffic; and, in 1807 and 1808, Congress finally abolished it.

Growth of slavery in the United States.

English and American traders brought thousands of slaves into the country; while, in the southern colonies, the negroes multiplied rapidly by natural increase. In the eighteenth century the importation of slaves gradually declined in the colonies north of Maryland, this tendency being most marked in New England. After the Revolution slavery was gradually abolished in the northern states. In 1790 the distribution of slaves among the states was as follows: —

New England States	3,886
New York, Pennsylvania, and New Jersey	36,484
Southern States	657,527
	697,897

Up to this time the course of the institution of slavery had been shaped *mainly* by economic forces. It is incorrect, however, to say that moral considerations had nothing to do with the abolition of the institution in the North, for an opposition to slavery based upon moral and religious grounds commenced early in the eighteenth century. Moreover, this feeling was not confined to the North, but was shared by eminent southern statesmen. Said Jefferson, writing concerning slavery, "I tremble for my country when I reflect that God is just." But back of all such considerations lay the fact that slavery had never been profitable in the North, and that in the South it had enabled the slave-owners to accumulate much wealth.

Causes that influenced the history of slavery.

Abolition, therefore, would cost the northern states little; while, in the southern states, it would destroy millions of dollars of property. In the South the demand for labor, to be employed in raising tobacco, rice, and indigo, caused a rapid increase of slavery. In the North smaller holdings and more careful cultivation were the rule. The careless and indolent slave was wholly unsuited for such work. On small farms, also, overseers could not be employed, and slave labor could not be directed properly. Finally, the expense of feeding and clothing slaves was much larger in the North, while the mor-

Abolition.

tality of negroes was far greater; so that the cost of slave labor was high and its efficiency was low.

The result of slavery was to divide the United States into two groups of states, — one dependent upon slave labor, the other upon free. From 1790 to 1860 there arose a bitter sectionalism based upon these differences. Slavery was forbidden in the Northwest Territory, and the great states formed in that region entered the Union as free states. Into the free states the increasing tide of immigration flowed, population increased rapidly, and manufactures and commerce developed. The southern states received few immigrants, and fell behind the rest of the country in respect to the growth of population and industries. By 1860 the free states had a population of 19,083,927; while the population of the slave states was only 12,315,374, of which number 3,953,696 were slaves. The invention of the cotton gin, in 1792, vastly extended the cultivation of cotton in the South, and this soon became the great staple crop of that section. Other branches of agriculture were neglected in order that the production of cotton might be increased. Slave labor was adequate to the work of producing large crops of cotton by wasteful surface culture extended constantly over new lands. But improved agriculture and mechanical or manufacturing industries, which required more efficient labor, could not be undertaken with the labor of slaves. So the South was shut up to agricultural pursuits that tended toward the gradual impoverishment of the soil. It could have no part in the

The end of the institution.

economic progress of the nation, and remained in 1860, as it had been in 1790, exclusively an agricultural region. Slavery had become, therefore, a distinct impediment to the economic progress of the South. The abolition of the institution freed that section from an absolute barrier to its further progress, and made possible the development, by free labor, of the manifold resources of the New South.

§ 16. From the first, free laborers existed in all the colonies. They were often people who had been able to pay the expense of their passage from the Old World, but lacked the capital or the enterprise to engage in some industry upon their own account. Their numbers were recruited by indentured servants whose terms of service had expired. The number of free laborers varied greatly in the different colonies, but it was largest where slavery was least general, and free workers were not brought into competition with slaves. In the northern colonies free laborers increased rapidly during the last half of the eighteenth century. John Adams, writing in 1780, says that one cause of the opposition to slavery in Massachusetts was "the multiplication of laboring white people, who would no longer suffer the rich to employ these sable rivals so much to their injury." Alexander Hamilton, writing in 1791, says: "There are large districts which may be considered as pretty fully peopled. . . . If these districts have not already reached the point at which the complaint of scarcity of hands ceases, they are not remote from it."

Free laborers.

One cause of the scarcity of hired laborers was the abundance of free land. Almost any one could become a proprietor, and cultivate the soil on his own account. The land was usually fertile, and the return to the agriculturist was large. These facts made it necessary for an employer of labor to pay wages sufficiently high to induce people to work for hire, rather than to secure land and engage in agriculture. American wages have felt this influence even to the present day. Economists have found one explanation of the high rates of wages in this country in these two facts of free land and the productivity of American agriculture. The elder Winthrop wrote in 1645, "Our children's children will hardly see this great Continent filled with people, soe that our servants will still desire freedom to plant for themselves, and not stay but for verie great wages." In 1723, a leading royal official wrote of the colony of New York: "North America containing a vast tract of land, every one is able to procure a piece of land at an inconsiderable rate, and therefore is fond to set up for himself rather than work for hire. This makes labor continue very dear, a common laborer usually earning 3 shillings by the day; and consequently any undertaking which requires many hands must be undertaken at a far greater expense than in Europe, and too often this charge only overbalances all the advantages which the country naturally affords, and is hardest to overcome to make any commodity of manufacture profitable which can be raised in Europe." From earliest times there is an

Effect of free land.

abundance of evidence to show that wages have been higher in the United States than in European countries. Within the last decade the most desirable portions of our public lands have been occupied, and laborers will have more difficulty in the future in finding an outlet in the unsettled regions of the West.

Classes of laborers in the colonies.

In the eighteenth century there were three classes of free laborers. *First*, there were many free laborers in the northern colonies engaged in agriculture or in domestic service. Such laborers, male and female, were usually hired by the year, and did not receive the highest rates of wages. In the southern colonies, such work was performed by slaves. The *second class* of laborers comprised those engaged in mechanical or manufacturing pursuits, or in trade and commerce. These were found in all the colonies, since slave labor could not be utilized for such purposes. This class of laborers received the highest wages and was always in demand, since the supply of skilled workmen was always inadequate. The *third class* was composed of unskilled laborers of the towns and villages. Their wages were sometimes high, but employment was irregular and their yearly income was not so large.

Labor in the present century.

The rapid growth of population during the present century has increased the number of laborers who work for hire. With the disappearance of indented servitude, free laborers formed the only class of workmen in the North and West. The abolition of slavery gave to the South the advantages of free labor.

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NOTE. — Students should consult the maps in the Eleventh United States Census Report on Population, pages XII.–XXVIII., for illustration of the westward movement of the frontier.

CHAPTER II.

THE GROWTH OF FOUNDATIONAL INDUSTRIES.

I. The Fur Trade and Cattle Raising.

§ 17. The development of the industries of the United States has been described in the following words:[1]

The development of industries.

"The United States lies like a huge page in the history of society. Line by line as we read from west to east we find the record of social evolution. It begins with the Indian and the hunter; it goes on to tell of the disintegration of savagery by the entrance of the trader, the pathfinder of civilization; we read the annals of the pastoral stage in ranch life; the exploitation of the soil by the raising of unrotated crops of corn and wheat in sparsely settled farming communities; the intensive cultivation of the denser farm settlement; and finally, the manufacturing organization with city and factory system."

§ 18. The earliest English colonists began to traffic with the Indians for peltry. In New England the fur trade furnished the earliest basis for the foreign commerce of that region. In New York the Dutch and the English fur traders pushed up the Hudson River, reaching, through the Mohawk

The fur trade.

[1] TURNER, Significance of the Frontier in American History.

Valley, the Great Lakes and the Illinois country. In Virginia the traders crossed the Alleghanies by the close of the seventeenth century, and later explored the mountains of Tennessee and the Carolinas. In the Carolinas the colonists began at an early date to compete with the Virginians for the trade with the Indians of the Southwest. Meanwhile, in the Mississippi Valley, the French extended their traffic with the Indians, dotting the interior of the continent with their trading posts. For the control of this valuable trade the English and French contended until the French and Indian War wrested this territory from France.

In the early history of this country the fur trade was important because it furnished a valuable industry which aided in building up a thriving commerce. But more than this, it prepared the way for the advance of civilization across the Appalachian ranges. The fur traders, following Indian trails,[1] planted the first posts in the outlying western wilderness. In their track, hunters and trappers followed. As numbers grew and game became scarce, both traders and hunters moved on into the wilderness. Their places were soon taken by the cattle raiser, and then by the farmer; and settled communities grew up. The trading post, therefore, located at some convenient place along an Indian trail or a river course, became the nucleus of a new area of settlement.

Economic significance of the fur trade.

[1] See ROOSEVELT, Winning of the West, i. 251, 314, ii. 328; SPEED, The Wilderness Road; also the speech by Senator Benton, quoted by TURNER in "The Indian Trade," 72, 73.

This process has been repeated at each step in the settlement of the West. After the Revolution, the set-

Later history of the fur trade.

tlers in the Mississippi Valley followed the paths marked by the early French traders. New Orleans and Mobile were the centers of the Indian trade in the southern part of the Valley, while the region of the Great Lakes was the seat of perhaps the greatest fur trade of the world. From Ohio to Wisconsin six lines of rivers furnished water routes from the Lakes to the Mississippi.[1] At these points old trading posts rapidly developed into important towns. Beyond the Mississippi, fur traders ascended the Missouri, penetrated the Rocky Mountains, and guided the earliest exploring expeditions and first immigrant trains through the mountain passes to the Pacific coast. Of this trans-Mississippi trade St. Louis was long the center, since the Missouri River gave it access to the entire Northwest. Along this route the Pacific Fur Company sought to establish a line of trading posts connecting its station at Astoria, Oregon, with the Mississippi Valley.[2]

§ 19. Cattle grazing has often been a special industry in the United States, and has an economic significance

Cattle raising.

distinct from that of agriculture. European cattle were imported into both Spanish and English colonies at an early date. In Virginia and the Carolinas cattle raising soon became distinctly a frontier

[1] See TURNER, Character of the Indian Trade, 21; HINSDALE, Old Northwest, first map.

[2] Read WASHINGTON IRVING, Astoria.

industry. Cattle were turned loose in the forests, where they multiplied rapidly. Advancing settlements pushed the large herds of cattle westward, where vacant lands abounded. In 1770 Wynne described the large herds, often numbering one thousand cattle, that were common in the Carolinas. A few years later Smyth gave an account of cattle raising on the Carolina frontier, where vast numbers of horses, cattle, sheep, and hogs were turned loose in the forests and savannas. Each owner branded his cattle with a brand which was recorded by the clerk of the county court. West of the Alleghanies the cattle raisers occupied new lands some time in advance of the coming of a settled agricultural population. Across the Mississippi the same process has been repeated; and, at the present day, cattle raising is carried on as a separate industry on the ranges of most of the Western States. It has gradually declined as the growth of a farming population has diminished the land available for grazing. In 1880 about 3,750,000 cattle and 7,000,000 sheep remained on the western ranges.

II. Agriculture.

§ 20. Agriculture has always been the largest single industry of the United States. The first task of the American settler has been to clear away the forests and bring the land under cultivation. **Production of the cereals.** The earliest English colonists endeavored to raise such crops as would furnish an adequate food supply. For this purpose maize, or Indian corn, proved best adapted. The colonists learned from the Indians how to plant

this hardy cereal, and secured large crops of corn, which became their most important article of food. At every stage of westward migration the same process has been repeated. Before the forests have been wholly cleared, corn has been sown in partial clearings, pumpkins and beans have been planted in the same patches of land, and an abundant food supply has been secured. When the fertile and open prairies of the Mississippi Valley were reached, the production of corn greatly increased; and the United States became able to supply large amounts for export. In 1895 the value of the corn and corn meal exported from this country was $15,299,000. In that year the corn crop amounted to 2,151,000,000 bushels, and its value was about $567,000,000. The cultivation of wheat has been extended continuously since the early days of colonization, although Indian corn proved a more reliable crop at first. Wheat and flour were exported from the middle colonies at an early date, and at the close of the eighteenth century New Jersey, Pennsylvania, and New York were the granary of the United States. Early in the present century the fertile prairies of the Ohio Valley began to yield large amounts of wheat. Between 1830 and 1850 exports of wheat and flour increased from 23,385,000 to 71,000,000 bushels. The culture of wheat has moved steadily westward. Minnesota, Nebraska, Kansas, and the Dakotas now form the granary of the United States. Exports of wheat amounted to 144,000,000 bushels in 1895. For the year last mentioned the wheat crop of this country was estimated at 467,000,000 bushels, valued at $237,000,000. For a long

time large crops of oats, barley, rye, and buckwheat have been raised in the United States, and the oats crop alone approaches in value the corn and wheat crops. In 1895 this country produced 824,000,000 bushels of oats, valued at $163,000,000.

§ 21. In the northern portions of the United States, special attention has been given to the grass and hay crop, since it has been necessary during the long winters to feed live stock upon hay stored up in the summer months. In New England and some of the middle colonies great difficulty was experienced at first in providing sufficient food for live stock during the winter, and the animals often died of starvation. Near the coast a scanty supply of salt hay was secured from the salt marshes, but in the thickly wooded regions of the interior even this resource was lacking. Hayfields gradually appeared as the forests were cleared, but the quality of the grass was usually poor. In 1750 timothy grass was introduced, and half a century later clover began to be generally cultivated. Since then the quantity and quality of the grass crop has steadily improved. In the prairies of the Mississippi Valley no such difficulties were encountered by the settlers, since a luxuriant growth of grass was found in those regions. At the present day grass and hay form the largest crop raised in the country. In 1895, after our pasture lands had furnished pasturage during the months when grazing was possible, the hay crop was valued at $393,000,000.

Production of grass and hay.

§ 22. In the first century of settlement many of the

fruits and vegetables known in Europe were introduced into the colonies. Little attention was paid to the development of fine varieties of fruit until the present century, during which the fruit crops have increased constantly in importance. The cultivation of nearly all vegetables has been very widely extended, but the white and the sweet potato have formed the most important crops, furnishing a considerable part of the food supply of the country. In 1895 the potato crop was valued at $78,000,000.

Vegetables and fruits.

§ 23. The cultivation of flax and hemp was commenced in America early in the seventeenth century, and many of the colonies attempted to stimulate it by means of bounties. The entire hemp crop has never been large, however, and it has diminished for the last thirty years. Kentucky and a few states of the Mississippi Valley produce about all the hemp raised in the country at the present time. Flax has always been raised in larger quantities, and has been much used in the manufacture of homespun cloth. For nearly forty years the flax crop has steadily decreased in all sections except the states of the Mississippi Valley. The production of cotton was stimulated between 1770 and 1790 by the invention of improved machinery for spinning and weaving that fiber. From New Jersey to Georgia experiments were made in cotton culture; and in the coast regions of the South Atlantic States a very fine variety, known as "sea island cotton," was developed. On the uplands in the interior there was raised an inferior grade, whose use was limited

Production of vegetable fibers.

by the fact that its short fibers could be separated from the seeds only by an expensive and laborious process. In 1792 Eli Whitney invented a cotton gin which performed this work very easily. This made the upland cotton available for exportation to the English market, where the demand was rapidly increasing. Between 1792 and 1800 the cotton exports from the United States increased from $30,000 to $3,000,000, and by 1810 the crop was valued at $15,000,000. Cotton culture was extended rapidly in the Gulf States, so that in 1859 the crop was valued at more than $200,000,000. Most of this cotton had been exported to England, and it was to the planters of the cotton states what tobacco had been to the colony of Virginia. Other industries had been neglected for the one business of cotton raising. The extension of cotton culture made slave labor very profitable to the planters, and fastened the institution of slavery more firmly onto the economic life of the South. The substitution of free labor for slave, since the Civil War, placed no permanent check upon the cultivation of cotton. In 1888 the crop amounted to 3,438,000,000 pounds, valued at $292,000,000. Texas, Mississippi, Alabama, and Georgia led in the production of this great staple product.

§ 24. About 1750 the sugar cane was introduced into some of the Gulf States. While other states have experimented with this industry, it has shown constant growth in Louisiana only, where most of the crop is now raised. In recent years sorghum has been cultivated in a number of

Production of sugar, rice, and tobacco.

states, while the sugar beet has been introduced in Nebraska and California. But the entire product has furnished only a small part of the sugar consumed in the United States. Rice has been produced in large quantities in the coast districts of the Carolinas, Georgia, and Florida. Tobacco has always been an important crop in certain sections of the country. In Virginia and Maryland it early became the principal product. A superior quality of tobacco could be raised on the rich soils of those colonies, while the London market furnished a constant demand. With this crop the planters of those colonies paid easily for large quantities of manufactured supplies imported from England. For two centuries the entire economic life of Virginia centered around the production of tobacco for the foreign market. The Middle Atlantic States finally commenced the cultivation of tobacco, and it has extended into New England and the Mississippi Valley. The crop has always tended to exhaust the fertility of the soil, and its continued cultivation has usually made it necessary to resort constantly to new lands. In 1894 the tobacco crop of the United States was valued at about $28,000,000. The State of Kentucky produced more than one third of the entire crop.

Other important products.

§ 25. Stock raising has always been a part of American agriculture, and live stock products form a most important part of the agricultural product of the country. Billions of gallons of milk and more than a billion pounds of butter and cheese are furnished by the dairies each year. Hams,

bacon and lard, live cattle, and dressed beef are exported in great quantities after the domestic demand has been satisfied. Wool is raised in large amounts, although a considerable part of our entire supply has been imported. Poultry and eggs are other important products, whose value is not far from $200,000,000 annually.

§ 26. Agriculture in the United States has been carried on chiefly by proprietors, not by agricultural tenants. The result of popular systems of land tenure has been that we "have millions of farms just large enough to profitably employ the labor of the proprietor and his growing sons; while we have also multitudes of considerable estates upon which labor and moneyed capital, live stock, and improved machinery are employed under skilled direction; and we have, lastly, those vast farms, the wonders of the world, in Illinois and California, where 1,000 or 5,000 acres are sown as one field of wheat or corn; or, as on the Dalrymple farms in Dakota, where a brigade of six-horse reapers go, twenty abreast, to cut the grain that waves before the eye almost to the horizon." The following statistics from the Census of 1890 show the character of our agricultural tenures: —

Land tenures.

Year.	Number of Farms cultivated by Owner.	Number of Farms rented for Money.	Number of Farms rented for Share of Products.
1880	2,984,306	322,357	702,244
1890	3,269,728	454,659	840,254

§ 27. The most striking feature of American agriculture has been that an abundance of fertile land has encouraged extensive methods of farming. From the fertile soil of new fields, large crops have been raised with little or no attempt to renew or to enrich the land. When in this manner the fertility of one field has been exhausted, another has been brought into cultivation. In older countries, where land is scarce, a more careful, intensive form of cultivation is necessary; and the farmer is obliged to return to the soil, by means of fertilizers, the various mineral ingredients that are taken from it by each year's crops. European writers have called the American practice "wasteful, wanton earth-butchery," and have criticised Americans for persisting "in taking up fresh land instead of the more costly process of manuring a worn-out soil." But it should be remembered that we have been rich in fertile lands, and until recent times poor in most other kinds of wealth. Our extensive agriculture has converted a portion of the natural fertility of our soils into other kinds of wealth that were less abundant. In the older sections of the country intensive cultivation has long been practiced. After the great staple crops of corn and wheat have been raised for successive years with the smallest expenditure of capital and labor, the soil becomes perceptibly impoverished; and the production of grain moves steadily westward toward unoccupied territory. Then, on the older lands of the East begins a more careful, intensive cultivation of smaller crops, vegetables, fruits, or grass for the support of the dairy. On the

Extensive cultivation.

better portion of these lands cereal crops are still raised by higher cultivation, while the poorer soils are often allowed to revert to forest. In the vicinity of towns and cities market-gardening allows a still more intensive application of labor and capital. On the newer lands of the West extensive farming, for some time to come, may suffice for the production of large staple crops; but in most parts of the United States the agriculturist must, in the future, resort to scientific soil cultivation. In this direction much has been done already. During the present century experiments and innovations have rapidly increased, while agricultural societies and publications have diffused knowledge of improved methods. In the invention and practical use of agricultural machinery the United States has led the world.

III. Fisheries and Mining.

§ 28. The rivers of most of the colonies abounded in fish, but New England possessed sea fisheries that formed the basis for a profitable commerce with the West Indies and with Europe. Thousands of hardy fishermen pushed their voyages as far as the Banks of Newfoundland, where there were the greatest sea fisheries of the world. The cod fishery has been the most important of these, although the whale fishery enrolled vessels of a greater tonnage from 1840 to 1858. During the last thirty years the character of the fishery interests of the United States has changed. The shore and inland fisheries have been developed into greater commercial importance than those of the deep sea. In

Fisheries.

1871 the United States Fish Commission was established. This body has been successful in propagating artificially more than forty kinds of fish. In 1890 the value of the fishery products of the country was over $42,000,000.

§ 29. Iron was the first metal to be produced successfully in the English colonies. By 1650 Massachusetts had established the industry of smelting iron from the "bog ores" that were found in marshes and at the bottom of ponds. The iron industry gradually spread through the other colonies, and became especially important in the middle colonies. Pig and bar iron were exported to England from 1718 to the time of the Revolution. Copper and lead were mined in small quantities in some of the colonies, but other attempts at mining met with little success. In the upper Mississippi region, lead was mined by the French and Spanish; but the vast stores of mineral wealth around Lake Superior remained untouched by European colonists.

Mining industries.

Early in this century gold was discovered in the Carolinas and Georgia, where about $24,000,000 worth of the yellow metal was mined up to 1847. Meanwhile the lead mines of the upper Mississippi were developed quite rapidly. In 1820 anthracite coal fairly began to be mined in Pennsylvania, and the coal fields of that state began to be opened up. This caused a rapid expansion of the iron industry. About 1840 coal was first used in smelting pig iron, and the production of iron greatly increased. It more

Development of mining, 1800—1860.

than doubled between 1828 and 1842. Smelting by charcoal still continued, however, in those states where wood was abundant. After 1830 geological surveys were established in many states, and the mineral resources of the country were explored more systematically. Between 1845 and 1850 copper mining was commenced in the Lake Superior district. The copper product of the country increased from almost nothing to more than 8,000 tons in 1860. Meanwhile gold had been discovered in California, and the gold product of the United States increased from $889,000 in 1847 to $65,000,000 in 1853. This last figure was nearly five times the annual product of the world from 1800 to 1845. Fifteen years later, silver was discovered in Nevada. By 1860 the mineral resources of the United States were fairly beginning to be developed.

Mining industries since 1860.

Since 1860 the growth of the mining industries of the country has been constant. The output of coal has increased until it forms the most valuable mineral product of the United States. In 1894 the statistics of the production of coal were as follows: —

Variety.	Tons.	Value at Mines.
Bituminous	118,820,405	$107,653,501
Anthracite	46,358,144	78,488,063

Pennsylvania produced practically all of the anthracite coal, and more of the bituminous than any other state.

Iron mining has advanced as steadily as coal mining. The output of iron ore increased from about seven million tons in 1880 to sixteen million tons in 1890. In 1895 the output was 15,957,614 tons. Michigan produces more than one third of the total product, while Alabama now produces more than Pennsylvania. Copper mining has developed wonderfully. The Lake Superior mines have now been equaled, temporarily at least, by those of Montana. Lead and zinc have been mined steadily, Missouri retaining its importance in this industry. In the production of gold and silver the United States has held a position of great importance, although within recent years the mines of Australia and South Africa have yielded larger amounts of gold. In the production of silver this country has led all others. While it is impossible to mention all the mineral products of the country, the growth of the petroleum industry should be noted. In 1889 the product of crude petroleum was valued at nearly twenty-seven million dollars. In 1894 the total value of the crude mineral products of the United States was estimated to be more than five hundred million dollars.

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CHAPTER III.

MANUFACTURES AND TRANSPORTATION.

I. Colonial Manufactures.

§ 30. The poverty of the American colonists and their remoteness from the English market compelled them to undertake the work of converting raw materials into finished products. Many kinds of manufactures had their beginning within the household. Soap making, candle making, dressing and manufacturing leather, the work of the carpenter and the smith, spinning yarn, weaving homespun cloth, making clothes and hats, and many other industries were carried on within the family. The larger farms and plantations, equipped with tool houses, forges, grist mills, and saw mills, were almost self-sustaining economic units. This lasted until the close of the eighteenth century.

Household industries.

§ 31. Yet, even in the early days, various manufactures were carried on for commercial purposes, not for consumption within the household. Salt and iron works were established for the purpose of supplying the domestic market. Brick making, cordage making, tanning, and other industries became important commercially. Saw mills and grist

Production for the market.

mills were run for public as well as domestic supply. Thus began a division of occupations, which was carried further when increasing numbers of artisans devoted themselves to the trades of the blacksmith, carpenter, wheelwright, shoemaker, cooper, sawyer, shipwright, bricklayer, etc. Such workmen performed much work that had been done formerly upon the farm.

An abundant supply of timber made it possible to establish various manufactures of wood. From pipe-staves and clapboards to wagons and ships, many of the colonies supplied the domestic demand, and had a surplus for export. The manufacture of iron was firmly established between 1650 and 1750. In some places rolling mills converted the iron into sheets and bars, while slitting mills cut it into rods. Wrought-iron nails, household utensils, and many kinds of tools were produced; and the manufacture of arms and cannon was begun. During the Revolution the iron industry stood the country in good stead. The textile industries also became important. The first colonists, with spinning wheel and hand loom, began to spin flax, hemp, cotton, or wool into yarn, and to weave the yarn into cloth. Gradually fulling mills were built, where homespun fabrics were rolled and pressed in hot suds and fuller's earth in order to thicken the goods and increase their weight. In the eighteenth century a number of factories produced cloth for the market. The colonists probably produced three fourths of the cloth consumed by them. The finer

Principal manufacturing industries.

grades of cloths were always imported from England, but the majority of the people depended upon the coarser domestic fabrics. The manufacture of cordage and sail cloth was an important auxiliary of the ship-building industry. Boots and shoes were important in inter-colonial trade as early as 1700. Lynn, Massachusetts, was a center for this branch of manufacture. Of other industries, paper making, printing, and publishing, and the manufacture of glass, pottery, and hats were the most important.

§ 32. This development of colonial manufactures took place not only in the face of English competition, but in spite of repeated attempts to destroy these industries. The commercial policy of England was to limit the colonies to the production of raw materials useful to English manufacturers, and to reserve the colonial market exclusively for the sale of English manufactured products. As early as 1699 Parliament prohibited wool or manufactured woolen goods from being exported from any of the colonies. In 1731 the exportation of hats was prohibited, and the industry was placed under oppressive restrictions. In 1751 Parliament forbade the erection of new iron furnaces, forges, rolling mills, or slitting mills, with the purpose of restricting the colonies to the production of pig and bar iron. Although these restrictions were evaded, they were an obstacle to the development of colonial industries.

The attitude of England.

§ 33. Manufactures were further developed in the northern colonies than in the southern, where the energy

of the people was occupied with the cultivation of tobacco and rice. Even in the northern colonies, fisheries, ship building and commerce with the West Indies absorbed a large portion of the available labor and capital. Finally, in all sections of the country, scarcity of labor and high wages hindered manufacturing enterprises. The high rate of American wages has existed since the earliest times,[1] and was a matter of record as early as 1645. It was due to the productiveness of labor employed upon new land. Laborers would not enter other industries unless employers could afford to pay as high wages as could be secured in agriculture. An industry could be established only when the superior efficiency of labor, or some other advantage, enabled the employer to pay the prevailing high wages.

Other obstacles to manufacture.

§ 34. Although the United States imported from England a large part of its manufactured supplies, yet Alexander Hamilton, in 1791, could give the following account of American manufactures:[2] "To all the arguments which are brought to evince the impracticability of success in manufacturing establishments in the United States, it might have been a sufficient answer to have referred to the experience of what has been already done. It is certain that several important branches have grown up and flourished with a rapidity which surprises, af-

Hamilton's Report on Manufactures.

[1] See page 28.

[2] See "Report on Manufactures," in TAUSSIG, State Papers and Speeches on the Tariff, 48, 49.

fording an encouraging assurance of success in further attempts. Of these it may not be improper to enumerate the most considerable." These were in substance as follows: —

1. Leather, shoes, harness, trunks, gloves, glue, etc.
2. Iron bars and sheets, steel, nail rods and nails, implements of husbandry, artificers' tools, household utensils, arms, etc.
3. Ships, cabinet and coopers' wares, wool and cotton cards, machinery for manufactures and agriculture.
4. Manufactures of flax and hemp, cables, cordage, sailcloth, twine, etc.
5. Bricks, coarse tiles, and potters' wares.
6. Ardent spirits and malt liquors.
7. Writing and printing paper, wrapping paper and pasteboard, paper hangings.
8. Hats of fur and wool.
9. Refined sugars.
10. Oils, soap, tallow candles.
11. Copper and brass wares.
12. Tin wares.
13. Carriages of all kinds.
14. Snuff, chewing and smoking tobacco.
15. Starch and hair powder.
16. Lampblack and painters' colors.
17. Gunpowder.

"Besides manufactories of these articles, which are carried on as regular trades, and have attained to a considerable degree of maturity, there is a vast scene of household manufacturing, which contributes more largely to the supply of the community than could be imagined without having made it an object of particular inquiry."

II. The Industrial Revolution and the Factory System.

§ 35. While the American colonies were struggling for independence, there began in England a series of economic changes which ultimately transformed completely English industry and commerce. These changes constituted the Industrial Revolution. Between 1790 and 1850 the United States was affected by the same influences. For this reason, we must now consider briefly the course of the Industrial Revolution in England.

The Industrial Revolution in England.

The economic condition of England in 1760 was primitive when compared with the present order of things. Manufactures were carried on mainly by hand, and water or horse power was seldom utilized. The woolen industry was the principal branch of manufacture, the iron trade coming next in importance, while manufactures of silk, linen, and cotton were much smaller. The textile industries were carried on often in country districts in combination with agriculture. The men of a household attended to the farm, while the women and children spun yarn for sale. Weaving usually occupied the men during the winter. In all industries the tools and machinery were simple, so that a person needed but little capital in order to become an independent producer and the employer of a few journeymen and apprentices. After 1740 the iron trade began to decline, because it was no longer possible to secure supplies of wood sufficient to furnish charcoal for smelting iron ores.

English manufactures in 1760.

In 1760 the entire foreign commerce of England amounted to about $120,000,000, a very small figure when compared with the development of the next fifty years. Domestic commerce was restricted by the difficulty of inland transportation. Roads were very bad, while the construction of canals had only commenced. London was the only national market, where products of all sections were exchanged; and the rest of the domestic commerce was carried on through a few local markets, through annual fairs, or through traveling merchants.

Commerce and transportation in 1760.

Labor and capital were hampered by many restrictions. In most towns industries were under the control of exclusive guilds, which supervised prices, quality of goods, and many details of business. In such towns no one could engage in any trade without becoming a member of the guild, and serving an apprenticeship of seven years. Laborers could not move from one parish to another, unless they could give guarantees that they would not become dependent upon the poor rates of the parish in which they settled. They were forbidden to form associations for any purpose, while justices of the peace were empowered to regulate wages. Joint-stock corporations hardly existed in any industries except banking, insurance, and foreign trade. Adam Smith, in 1776, could appeal to experience to prove that such companies, whose hired managers controlled other people's money, would generally be managed wastefully and negligently; so that they could not compete with the common business partnership.

Legal position of labor and capital in 1760.

Between 1760 and 1840 English industries were revolutionized. The cause of this was a remarkable series of inventions which affected the cotton and woolen industries first. The production of cotton and woolen goods had long been hindered by the difficulty of supplying weavers with enough yarn. The rude hand loom could weave cloth faster than the spinners could produce yarn, a single thread at a time, upon the spinning wheel. Between 1764 and 1780 three inventors, Hargreaves, Arkwright, and Crompton, perfected appliances which finally enabled a spinner to spin many thousand threads of yarn at once. These inventions enabled spinners to produce more yarn than the clumsy hand looms could weave into cloth. But, in 1785, Cartwright invented a power loom which, after undergoing improvements for many years, placed appliances for weaving on an equality with the machinery for spinning. Meanwhile, James Watt had invented the steam engine in 1769. Sixteen years later it began slowly to displace water power in running the new spinning machinery. These inventions first revolutionized the manufacture of cotton, but during the first quarter of the present century all textile industries were affected by them.

Changes in the textile industries.

The steam engine was first used in coal mines, in sinking shafts, in pumping water out of the mines, and in hoisting coal from the pit. In this way sufficient supplies of coal could be obtained to run the smelting furnaces, and the iron industry was stimulated into new life. By the use of the

Changes in the iron industry.

steam engine the blast furnace was greatly improved, so that the production of iron increased rapidly.

From 1755 to 1800 many canals were constructed between important places, with the result of cheapening transportation. Early in the present century the highways of England were greatly improved. During the second quarter of the century railroad construction was commenced, and the steam engine revolutionized land transportation. By 1850 it had been applied successfully to ocean transportation.

Changes in transportation.

One result of the Industrial Revolution was the growth of the factory system. The new machinery was far more expensive than the old hand loom or spinning wheel. Consequently the ownership of capital tended to pass out of the hands of the laborers, who became dependent upon capitalist employers for the supplies of tools and materials with which they worked. Then it appeared that, in order to apply water or steam power advantageously in operating the new machinery, it was necessary to concentrate a number of machines in the same building. Moreover, as the product of an establishment increased, the processes of manufacture could be divided more profitably among different classes of laborers. This fact necessitated more thorough superintendence and organization. Such causes led to the gradual concentration of industry in large factories, and to the disappearance of the small establishments of the domestic producers.

Rise of the factory system.

In a period of such rapid growth and change, the old restrictions on the establishment of industries and the

regulation of prices and wages could not be maintained. More and more these laws and customs fell into disuse, and capitalists and laborers were left free to establish new enterprises, and to arrange their respective interests by a contract which was nominally free. Competition became the ruling economic force, and regulation by law was given up for the time. One of the most important results of the Industrial Revolution was the destruction of mediæval restrictions upon competition, and the abandonment of prices and wages to determination by the contracts of the competing parties.

Changed conditions of labor and capital.

§ 36. In 1789 agriculture and commerce were the principal industries of the United States, although domestic manufactures had been established. There appeared here and there a desire to promote the rapid growth of manufactures, in order that the country need not depend upon England for manufactured goods. Largely from a desire for what was termed "industrial independence," attempts were made to foster manufactures. In this effort a great obstacle was encountered. England possessed the inventions that were revolutionizing industry, while without such appliances it would have been hopeless for Americans to attempt to compete with the manufacturers of the mother country. But England intended to retain the United States as a market for her manufactured products, and did not intend to allow the new inventions to be used outside of her own borders. Stringent laws prohibited the exportation of machines, plans,

The Industrial Revolution in the United States.

or models of machinery; and the emigration of skilled workmen was forbidden. After unsuccessful attempts to secure a knowledge of English machinery and methods, a cotton mill was finally equipped in 1790, at Pawtucket, R. I. A few years later the cotton gin was invented. Yet the cotton industry grew very slowly until after 1807, when foreign commerce was forbidden by the embargo, and domestic manufactures rapidly developed.

Slater's cotton mill at Pawtucket marked the establishment of the factory system in the United States. Yet weaving was still performed by hand, and weaving and spinning were not united in a single factory. In 1814 Mr. Francis Lowell constructed a power loom at Waltham, Mass., and completed a factory equipped with machinery for spinning and weaving cotton. This marked the completion of the factory system. Before long other industries were developed in a similar manner, and American manufactures commenced a period of steady growth.

The completed factory system.

III. Transportation.

§ 37. The first roads in the colonies had to be cut through the dense forests that covered the Atlantic coast regions. Indian trails offered more or less beaten ways that were often widened and straightened into highways. Continuous roads finally connected the principal towns of the tidewater districts, but wagon roads did not exist far from the seacoast until after 1750. Bridges were constructed very slowly, and most rivers had to be forded. The larger streams

Roads.

were crossed by ferries, which gave very poor, and often dangerous, service. The colonial roads were in the charge of the local political units, the towns and counties. They were constructed only as local needs demanded, without reference to any general plan for colonial highways. The "road tax" levied by the towns or counties was paid in labor, not in money; and the work of road building was very badly done. Both this custom of "working out the road tax," and the bad roads produced by it, remain in many country districts to this day. About 1790 turnpike roads, or highways constructed and maintained by tolls, began to be built. Early in the present century the turnpike systems were rapidly extended. These roads were built by corporations which were given rights of way, and allowed to charge tolls. They were advantageous in a time when the local governments could not be induced to build adequate highways, but grave abuses soon appeared. The tolls were often excessive and the roads were poor. In more recent times the tendency has been to bring all roads under public control, and to provide for highways by general taxation. Still more recently some of the state governments have begun to aid in the very necessary work of improving our roads, which are the worst to be found in any civilized country.

Road building by the United States.

Early in this century, after settlements had been planted west of the Alleghanies, it became very necessary to have some means of communication between the seaboard and the Mississippi Valley. There arose a strong movement in

favor of the construction of long-distance highways, canals, and other improvements by the national government. Between 1806 and 1837 the United States built a highway known as the Cumberland Road, which extended from Washington to Cumberland, and thence by way of Wheeling, through Ohio, Indiana, and Illinois, to the Mississippi River near St. Louis. By 1840, a growing opposition to internal improvements by the national government put an end to such expenditures by the United States.

§ 38. The original colonies were favored with easy means of intercolonial communication by sea, while a number of navigable rivers gave access to the interior regions of the seaboard. Lines of packet sloops were established along the seacoast and on the Delaware and Hudson rivers. After 1807 steamboats were placed upon many of these routes. A few years later they appeared upon the Great Lakes. On the rivers of the Mississippi Valley, steam navigation was exceedingly important. From 1815 to 1860, steamships multiplied on all these waters. They furnished an easy means of access to all parts of this region, and greatly hastened the development of the Valley. After 1860 the railroads began to secure a large part of this carrying trade. On the Great Lakes the steamboat has held its own, and to-day the lake fleet comprises more than one fourth of our entire merchant marine.

Transportation by water.

Washington, when a young man, perceived the possibility and desirability of constructing canals connecting the Hudson River and the Great Lakes, and connecting

Chesapeake Bay with the Ohio River. Between 1790 and 1800 many canals were projected, and a few were built. The era of canal construction really commenced after 1820. The Erie Canal was opened from the Hudson River to Lake Erie in 1825, and soon cheapened transportation from the Ohio Valley to the seaboard so that rates fell to one tenth of the former cost. Branches were built, and towns and cities sprang up wherever the canal met a branch or a natural watercourse. Before long other canals were built between the Ohio River and Lake Erie, between the Hudson and Lake Champlain, and between the coal regions of northwestern Pennsylvania and the seacoast. Many states entered upon the construction of elaborate canal systems. Pennsylvania, Virginia, Indiana, and Illinois were among the number. Generally these canals proved unsuccessful, and were either abandoned or fell into the hands of railroads. Indeed, railroads made their appearance very soon after the canals were opened. In many cases the canals could not compete with the railroads; but other canals, notably the Erie, proved to be successful competitors, and have tended permanently to lower transportation charges.

Canals.

§ 39. By 1830 the era of railway transportation was opened by the completion of the first few miles of the Baltimore and Ohio Railroad. Shortly after, railroads were built from Boston to Albany, from Richmond to Chesterfield, from Albany to Saratoga, and from Charleston to Hamburg. By 1840 there were 2,755 miles of railways in the United States.

Railroad transportation.

Practically all were in the Atlantic States, and they were short, independent lines, radiating from Boston, Albany, New York, Philadelphia, Baltimore, Richmond, and Charleston. They were local roads, yet they furnished an almost continuous line of transportation from New York to North Carolina.[1]

Second decade of railroad construction.

Between 1840 and 1850, railroads were extended very rapidly in New England, where 2,600 miles of track were in operation the latter year. A road was completed from Boston to Albany, so that New England was placed in direct communication with the West, via the Erie Canal. By 1850, railroads had been pushed well into the western portions of New York, Pennsylvania, and Maryland. Georgia had started a railway system, while roads were being constructed in the Mississippi Valley. As yet no lines of railway connected the seaboard with the West, while the roads still remained local companies serving local needs.

The third decade.

From 1850 to 1860 the railway mileage of the United States increased from 8,571 to 28,919 miles. The Middle Atlantic States rapidly pushed their railways westward. In the Southern States remarkable progress was made. But in the Mississippi Valley railroad expansion was most noteworthy. Chicago and St. Louis were finally connected with the Atlantic coast, while the states north of the Ohio and east of the Mississippi were covered with a network of

[1] See Scribner's Statistical Atlas for maps showing railroad construction by decades.

railways. Twenty-seven million acres of public lands had been granted by Congress to aid the construction of railroads in the West and South. The people looked upon the roads in a friendly manner; and states, counties, and towns granted large sums of money to further their construction.

The Civil War checked railroad building only temporarily. After 1866 it was continued on a larger scale than ever. For political reasons the United States favored the construction of railroads to connect the Pacific coast with the rest of the Union, and granted millions of dollars and millions of acres of land to aid the Union and Central Pacific roads. Then in the Southwest and Northwest land grants and subsidies to railways were renewed.

The fourth decade.

In 1873 the country had 68,484 miles of railroads. Since that time many thousand miles of road have been built in the states west of the Mississippi, and other lines have been pushed through to the Pacific coast. In 1896 there were over 180,000 miles of railroads in the country. During the last twenty-five years, railways have often been constructed as speculative enterprises far in advance of the needs of the country. Sometimes the construction of such a road leads to the rapid development of the region through which it runs, and so creates a paying business. But such enterprises often lead to the building of unnecessary lines that can have no immediate prospect of becoming paying investments.

Railroad construction from 1870 to 1893.

The character of American railways has changed

greatly since 1850. The early roads were short, local affairs. Between 1850 and 1860 local roads began to be consolidated into through lines. Thus the numerous local roads that together covered the distance from Albany to Buffalo were consolidated by Vanderbilt into the New York Central Railroad. About the same time the Pennsylvania Railroad secured a through line from Philadelphia to Pittsburg, and the Baltimore and Ohio pushed its way westward. Then followed efforts to secure control of roads that should give access to Chicago and other points in the Mississippi Valley. At length, five trunk lines were formed, controlling through routes from the West to the seaboard. In all directions a similar process went on. The reason for such consolidation was that the union of several short lines under one management diminished the expenses of operation.

Railroad consolidation.

The establishment of trunk lines introduced a new era of railroad rate-making. The old local roads had enjoyed a practical monopoly in their several districts. Competition existed only at a few points where competing roads met. But the trunk lines could compete with each other for the through freight between the West and the East, and the sharpest rivalry sprung up. The economies of operation made possible by consolidation enabled the trunk lines to reduce their charges, while competition for through traffic obliged them to do so. Competition finally became so fierce as to lead to "railroad wars," in which rates were often lowered below the cost of transportation. Such "cut-throat com-

petition" was followed by pooling agreements between the different roads, by which rates were maintained at a higher level, and the profits thus secured were divided between the roads composing the pool. In 1887 Congress prohibited the formation of pools, and endeavored by an Inter-State Commerce Act to remedy certain abuses. But the roads have frequently succeeded in maintaining rates by traffic agreements of a more or less secret character. The consolidation of railroads did not end with the establishment of through lines east of Chicago. West of that city the work of consolidation has extended to the Missouri River, and from the Missouri to the Pacific. Between St. Louis and the Southwest the same process has gone on. In 1890 it was estimated that one eighth of the railway mileage of the country was under a single management, while over one half of the railroads had fallen under the control of twenty other managements. The prospect is that a few great trans-continental lines will finally control all the transportation business of the country, except that which is of a purely local character.

IV. Ship Building.

§ 40. The forests of the New World supplied abundant materials for ship building, which was begun in the first years of the colonial history. Massachusetts had built one hundred and twenty vessels as early as 1655. By 1700, many ships were built each year in New York, Pennsylvania, and Delaware. In the southern colonies less was accomplished until the

Colonial ship building.

middle of the eighteenth century, when ship building developed rapidly in all of the colonies. In the year 1769 over three hundred and eighty vessels, with a total burden of 20,000 tons, were constructed in America. Between 1780 and 1800, wooden vessels were built upon some of the Great Lakes. Ship building was the first mechanical industry to be largely developed in the colonies, and it made possible the growth of a large and profitable commerce.

§ 41. In 1789 the tonnage of the ships registered in the foreign trade was 123,893 tons. For the next twenty-five years Europe was in a state of continual war, and American ships secured a large part of the carrying trade of Europe. By 1806, the ships registered in foreign trade had a tonnage of 795,507 tons. In the same year the ships in the coasting trade had a tonnage of 340,540 tons, while the sea fisheries employed ships with a tonnage of over 69,000 tons. The United States, in 1790 and 1792, levied discriminating taxes upon foreign ships, with the possible result of throwing more of our commerce into the hands of American ship owners. After 1816 the restoration of peace in Europe caused us to lose a part of the carrying trade of European countries. In 1840 our foreign trade employed no larger tonnage than in 1806, but our coasting trade employed ships with a tonnage of 1,176,000 tons. Between 1817 and 1820 our navigation laws were extended, and made especially severe against foreign ships. The reason for such illiberal measures was the resentment aroused by the harsh

American shipping from 1789 to 1840.

policy pursued by England until 1830. The laws enacted by Congress at that date are mainly unchanged at the present day. They aim to prevent Americans from purchasing foreign ships and entering them under American registry. They exclude foreign vessels from our coasting trade, and impose discriminating charges upon foreign ships. Many of these regulations prove hindrances to American interests, while they have not benefited American ship builders materially.

§ 42. From 1840 to 1861 the tonnage of the vessels registered in the foreign trade increased from 762,838 to 2,496,894 tons, while the tonnage of the coasting fleet increased to 2,704,544 tons. During this period seventy per cent of our foreign commerce was carried in American vessels, while our ships did a large part of the carrying trade of the world. In producing wooden sailing vessels American ship builders were unequaled, and their magnificent clipper ships were superior to all others. This was accomplished, moreover, when wages and the cost of all materials except wood were much higher than in other countries. But, after 1850, steamships began to replace sailing vessels in ocean commerce. In the construction of steamships the United States was soon outstripped by Great Britain. The Civil War struck a terrible blow to American shipping interests, and our merchant marine rapidly diminished.

Ship building from 1840 to 1861.

§ 43. Since the war our foreign marine has also constantly declined, although the ships engaged in the coasting trade have increased. On the Great Lakes there has

been wonderful progress. The total merchant marine of the United States diminished from 5,539,813 tons in 1861 to 4,684,029 tons in 1894. At the same time, the proportion of our foreign trade carried in American ships decreased from 75 per cent in 1855 to 13.3 per cent in 1894. The causes of this decline are partially in dispute. But it certainly began a few years before the Civil War, so that the ravages of Confederate privateers only hastened a process that had already commenced. One primary cause is the fact that iron and steel ships have so largely replaced wooden vessels. As early as 1855 it was determined that iron ships, although more expensive to construct, were in the end more durable and consequently cheaper than wooden ships. It also appeared that iron vessels better withstand the strain of heavy steam machinery. More recently, steel has replaced iron for ship construction. Now, American builders had a great advantage in the cheapness of their wood supply, as well as in their skill in constructing wooden vessels. Iron ships, however, could be built more cheaply in England; and therefore the ocean-carrying trade passed to ships of English construction. More than this, American builders were handicapped by the fact that they were very slow in turning from sailing vessels to the construction of steamships. So long as steel vessels retain their present superiority, American ship builders will not regain their former position until they are able to construct steel vessels as cheaply as the builders of foreign nations. In recent years the outlook has improved. The creation

Causes for the decline of our merchant marine.

of our new navy has stimulated the construction of steel vessels, while the cost of building them has greatly decreased. The expense for labor is the principal item of cost that is larger here than in England, but this disparity seems to be diminishing. Unquestionably, the steel ships now constructed in this country are unexcelled in any particular by ships manufactured in any country of the world.

V. The Textile Industries.

§ 44. Spinning machinery was introduced into the cotton industry in 1790, but nearly twenty years passed before as much was accomplished in the woolen industry. The period of commercial restriction following the embargo in 1807 practically shut off foreign supplies. This caused a rapid development of woolen and cotton manufactures. Many of the mills built at this time, however, were badly constructed and equipped, so that they turned out a very coarse product. Between 1815 and 1825 the power loom was introduced into this country. Large factory towns grew up in such places as Lowell, Lawrence, Fall River, Cohoes, and Patterson.

The cotton and woolen industries.

§ 45. Since 1820 the growth of cotton manufactures has been continuous. The industry has been concentrated largely in New England from the beginning. In 1890 seventy-six per cent of the cotton spindles were located in that section, Massachusetts having the largest number. Since 1870 there has been a marked development of cotton manu-

The cotton industry after 1820.

facture in the South. The capital so invested increased from $17,375,000 in 1880 to $53,827,000 in 1890. Since these factories can obtain raw cotton without incurring any considerable expense for cost of transportation, it seems probable that the future development of this industry in the South will be rapid. The following table shows the rapid growth of cotton manufactures in the United States: —

	1840.	1880.	1890.
Value of product	$46,350,000	$192,090,000	$267,981,000
Pounds of raw cotton consumed	126,000,000	750,343,000	1,117,945,000
Number of spindles in factories	2,284,000	10,653,000	14,188,000
Capital invested	$51,102,000	$208,280,000	$354,020,000

Present condition of the cotton industry.

The cotton manufacture in the United States has been conducted hitherto mainly for supplying the domestic market. In the Tenth Census, Mr. Atkinson summed up the situation as follows: "The principal market for our own fabrics is found among the thrifty working people, who constitute the great mass of our population. It has therefore happened that, although we have not until recently undertaken the manufacture of very fine fabrics, the average quality of the fabrics that we do make is better than that of any other nation, with the possible exception of France. It is for the wants of the million

that our cotton factories are mainly worked, and we have ceased to import staple goods, and shall never be likely to resume their import. On the other hand, we may for a long period continue to import the finer goods that depend mainly on fashion and style for their use, and that are purely articles of luxury." Yet in 1895 we exported over $13,789,000 of cotton manufactures, while imports of this sort amounted to $33,196,625. In the future it is probable that the United States, having the advantage of immediate proximity to the great source of the world's supply of raw cotton, will surpass other countries not similarly situated.

§ 46. The manufacture of woolen fabrics did not develop as rapidly as the manufacture of cotton. One reason for this was that the domestic supply of wool has never been sufficient, while of cotton this country has possessed a cheap and abundant supply. Moreover, tariff duties often imposed on imported wool have for much of the time increased the cost of raw materials to the manufacturer. The woolen manufactures that sprung up during the War of 1812 suffered considerable reverses after 1815, but by 1828 the industry seemed to have surmounted whatever initial difficulties there may have been in the way of its development.

The woolen industry.

The statistical table on page 72 shows the growth of woolen manufactures in the United States since 1840.

It is interesting to study the location of the woolen industry in the United States. At the opening of the present century it was, like all domestic industries,

Articles.	1840.	1860.	1880.	1890.
Woolen Goods:				
1. Capital	$15,765,000	$30,862,000	$96,095,000	$130,989,000
2. Product	20,696,000	61,894,000	160,606,000	133,577,000
Worsted Goods:				
1. Capital	. . . .	3,230,000	20,374,000	68,085,000
2. Product	. . . .	3,701,000	33,549,000	79,194,000
Carpets:				
1. Capital	. . . .	4,721,000	21,468,000	38,208,000
2. Product	. . . .	7,857,000	31,792,000	47,770,000
Felt Goods:				
1. Capital	. . . .	. . . .	1,958,000	4,460,000
2. Product	. . . .	. . . .	3,619,000	4,654,000
Wool Hats:				
1. Capital	. . . .	. . . .	3,615,000	4,142,000
2. Product	. . . .	. . . .	8,516,000	5,329,000
Hosiery and Knit Goods:				
1. Capital	. . . .	4,035,000	15,579,000	50,607,000
2. Product	. . . .	7,280,000	29,167,000	67,241,000
Total:				
1. Capital	15,765,000	42,849,000	159,091,000	296,494,000
2. Product	20,696,000	80,734,000	267,252,000	337,768,000

widely diffused throughout the country. With the rise of the factory system, it became more concentrated either near the sources of the domestic wool supply, or by available water powers. Gradually, however, the manufacture has become concentrated near the markets where both foreign and domestic wools are more easily gathered, and in the vicinity of labor markets where skilled textile operatives are to be found. Eight cities, Philadelphia, Lawrence, Providence, and Lowell being the most important, now turn out nearly thirty-six per

cent of the woolen product of the country. New England, New York, New Jersey, and Pennsylvania possess more than eighty-five per cent of the woolen machinery. Of these, Pennsylvania leads, Massachusetts holding second place. At the present time the woolen goods produced in the United States are sufficient to supply eighty-nine per cent of the domestic demand. In 1895 imports of woolen goods amounted to $38,539,000, while the exports were less than one million dollars.

§ 47. A complete account of the textile industries of the United States should include some mention of the silk manufacture and of establishments devoted to dyeing and finishing textile products. The product of silk fabrics has increased from $1,809,000 in 1850 to $87,298,000 in 1890; while the product of the dyeing and finishing industries in 1890 was $28,900,000. The imports of silk manufactures in 1895 amounted to $31,206,000, and the exports of such goods were insignificant. The following table shows how the textile industries of the United States are concentrated in the same states: —

Combined textile industries.

Locality.	Woolen Product, 1890.	Cotton, 1890.	Silk, 1890.	Dyeing and Finishing, 1890.	Total Textiles.
United States	$337,768,524	$267,981,724	$87,298,454	$28,900,560	$721,949,262
Massachusetts	72,681,408	100,202,882	5,557,569	6,496,215	184,938,074
Pennsylvania	89,337,419	18,431,773	19,357,546	5,240,761	132,367,499
New York	53,340,151	9,777,295	19,417,796	3,636,051	86,171,293
Rhode Island	34,722,493	27,310,499	2,229,062	4,743,561	67,005,615
New Jersey	9,984,640	5,902,615	30,760,371	6,183,397	52,831,023
Connecticut	20,843,965	15,409,476	9,788,951	715,388	46,757,780
New Hampshire	14,445,172	21,958,002	Not separately reported.		37,256,364
Maine	8,814,256	15,316,909	Not separately reported.		24,911,165

VI. Iron and Steel Industries.

§ 48. The Industrial Revolution began an era of machine production, and caused a new demand for iron as the material needed for machine construction. Therefore iron occupies a position of peculiar importance at the present day. The development of other industries necessarily increases the demand for iron, while a depression in business causes the demand to slacken. Many years passed before the revolution in English methods of producing iron affected the industry in the United States. Until nearly 1840 iron continued to be smelted by charcoal, with methods that differed little from those of colonial times. Pennsylvania already produced one half of the iron smelted in this country, and Pittsburg was becoming the center of the iron industry in western Pennsylvania. About 1840 anthracite coal was used in smelting, and the blast furnaces began to be improved. The industry was then placed on a modern basis, and the product increased from 200,000 tons of pig iron in 1830 to over 900,000 tons in 1860. In 1850 coke began to be used in smelting, and some years later uncoked bituminous coal was employed. Gradually the production of pig iron was concentrated in the vicinity of the coal supplies, since it was cheaper to carry iron to the coal regions than to carry coal to the iron mines. Thus most of the iron produced in Michigan has been smelted in other states where coal is more abundant. By 1856 the iron and coal resources of the United States had been developed so far that Mr. Abram S. Hewitt could

The iron industry from 1789 to 1860.

write, "In point of fact the materials for making a ton of iron can be laid down in the United States at the furnace with less expenditure of human labor than in any part of the known world, with the possible exception of Scotland." Ten years later the English economist Jevons wrote, "It is impossible there should be two opinions as to the future seat of the iron trade. The abundance and purity of both fuel and ore in the United States, with the commercial enterprise of American manufacturers, put the question beyond doubt."

§ 49. Yet the iron resources of the country had hardly begun to be developed in 1860. The increase in the product of pig iron during the thirty years from 1860 to 1890 is shown herewith: —

Year.	Product in Tons.	Value.
1860	987,559	$20,870,000
1870	2,052,821	69,640,000
1880	3,781,021	89,315,000
1890	9,906,607	145,643,000

Of this product Pennsylvania has produced nearly one half, — Ohio, Illinois, and Alabama coming next in importance. In 1860 the steel product of the United States was very small, amounting to only 11,838 tons, valued at $1,778,240.

Iron and steel industries since 1860.

In 1867 steel was made by the newly introduced Bessemer and open-hearth processes, and the industry has ever since shown a constantly increasing product. In 1890 the rolling mills and steel works turned out 5,049,000 tons of steel. The Census of 1880 showed

the United States to be "the second iron-making and steel-making country in the world." Since that time it has surpassed England in this respect.

§ 50. Many kinds of manufactures of iron and steel have been established in this country for a long time. The manufacture of wrought-iron nails, of the simpler kinds of tools and cutlery, and of firearms are some of the older branches of this industry. Yet up to 1860 the American market was largely supplied by foreign producers of iron and steel manufactures. The exports of such commodities never exceeded $1,000,000 until after 1840, and amounted to only $10,000,000 in 1865. During the last fifty years, however, remarkable progress has been made in the American manufacture of iron and steel. Wire and cut nails, iron and steel pipes, cutlery, tools and machinery of all kinds, stationary and locomotive engines, arms and armor plate, steel rails, and many other products of iron and steel are now turned out in quantity sufficient to supply the greater part of the domestic demand and to leave a surplus for export. In 1895 the iron and steel products exported from the United States amounted to $32,000,000, while the imports of such commodities were slightly more than $23,000,000. One important feature of this kind of American manufacture has been the early and extensive use of interchangeable mechanism. Firearms, sewing machines, locomotive engines, watches, clocks, agricultural implements, and many other products have been constructed with interchangeable parts; and in this field American manufacturers have won celebrity.

Manufactures of iron and steel.

LITERATURE ON CHAPTER III.

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CHAPTER IV.

THE CONSUMPTION OF WEALTH.

I. Human Wants.

§ 51. The preceding chapters have explained briefly the history of the leading industries by which the people of America have endeavored, for nearly three centuries, to supply their wants for food, shelter, clothing, and all those commodities that are needed to support life, and to make civilized existence possible. The science of economics treats of precisely these efforts of mankind to secure certain material objects, or certain services of other people. It deals, in short, with those activities of man which are directed toward securing a living. The reason why men carry on these activities is that they have certain needs or wants which can be appeased only by appropriate human action. Therefore, human needs may well be made the starting point of economic studies; and our first work will be to examine into the character of the wants that impel men to constant efforts to secure a living for themselves and their families.

Definition of economics.

§ 52. Man has a material body which demands certain objects necessary for its preservation and develop-

ment. From this source arise certain bodily wants, some of which man shares in common with other animals. The needs for food, drink, clothing, and shelter for one's self and one's family are the principal animal wants of this character. Beyond this point the wants of the lower animals hardly extend; but man, endowed with superior faculties and a higher spiritual nature, has developed a multitude of higher needs. Some of these are of a spiritual character, as the desire for companionship, for intellectual or religious development, and the like. But others are of a material nature. As men become more intelligent and refined, they grow dissatisfied with the ruder and coarser forms of food, clothing, and shelter. They demand more varied and palatable food, finer clothing, more beautiful houses. Their æsthetic faculties transform the demands of their animal natures, and infuse a spiritual element into what were formerly simple material desires for food, clothes, and shelter. A dining table artistically arranged, a beautiful dress, or a finely designed house will serve as examples of material goods that satisfy animal wants which have been partially transformed by the demands of man's æsthetic faculties. Moreover, it must be noticed that many spiritual wants can be satisfied only through the medium of material objects. Thus a printed book is often the only means by which knowledge can be communicated from one mind to another. Finally, many of man's higher needs have a distinctly social character. One of the strongest human wants is the desire for the society of one's fellows. Out of

Origin of human wants.

this desire of men to live together in an organized society, there arise many social wants of an economic character which are oftentimes satisfied by collective or social action. Roads, bridges, sewers, schools, asylums, parks, postal facilities, and many other economic goods are the result of social action, and minister to social or public needs.

§ 53. In the development of human wants a certain order can be observed. In the lowest stages of barbarism, men are found to be almost devoid of any but the animal needs and desires. They can advance in civilization only as fast as their higher faculties can be developed, and higher wants aroused within them. The principal difficulty in efforts to civilize a savage race is to make such people desire anything more than the purely animal satisfactions with which they have always been contented. As men advance in the scale of civilization, their wants rapidly increase in number and variety. We have seen that this is due to the development of higher spiritual faculties. These both arouse within men higher desires, and also make it possible to devise means for their gratification. These higher desires, and the power to satisfy them, are alike peculiar to man. The food of the horse or dog, and the abodes of the birds or the beaver, have in all known times remained the same, except as they have been modified by human action. The progress of the human race from barbarism to civilization has been marked first and fundamentally by an increase and a diversification of wants. This has been due to the influ-

Development of wants.

ence of man's spiritual faculties in transforming purely animal wants, and in developing multitudes of higher desires.

§ 54. Economics is not directly concerned with all the possible wants of man's nature. It studies only those wants which impel him to exertion in order to secure a living, in order to procure certain material objects, or certain services of other persons. In a rough way, therefore, we may classify the wants with which economics deals as (1) wants for material objects, and (2) wants for personal services.

Classification of wants.

But a further classification of wants will be of use. We may divide them into "existence wants" and "culture wants." The first class comprises all the purely animal wants; the second includes all wants for those things which lead to the refinement and ennobling of men's lives.

A second classification.

Many of the wants of man's animal nature are for objects necessary to the continued existence of families of human beings; others are for objects of relative indifference, so far as the mere preservation of life is concerned. The non-satisfaction of necessary wants leads to physical pain, disease, or death. Hence normal persons will procure the objects necessary for such needs before attempting to satisfy other desires. The demand for such "necessaries of life" will, therefore, remain strong and fairly constant even if other satisfactions have to be given up. Another fact should also be noticed. As fast as the lower existence wants are appeased, men often become conscious of

Existence wants.

new needs and desires, which they now have an opportunity to satisfy. Progress in civilization depends upon the awakening of such higher wants. With a progressive people, therefore, the satisfaction of existence wants serves merely to arouse new desires, and to stimulate men to attempt to satisfy them.

Culture wants.

The non-satisfaction of culture wants may result in a loss of comfort, of pleasure, or of social esteem. These wants are largely acquired; yet the force of habit may make such desires very strong, so that they may seem to have almost the importance of existence wants. To people in one social class, expensive clothes or a private carriage may seem a decency merely, and a necessity to the maintenance of social position or esteem. To other people such objects may be luxuries, and may seem to have no connection with real personal welfare. These culture wants, therefore, vary greatly according to individual tastes or social position. The number and the possible variety of such wants are, moreover, really illimitable. Existence wants are far less expansive. The absolute amount of nourishment, of clothing, or of shelter which a person requires is limited quite narrowly, and cannot be greatly increased. But the possible varieties of *fine* food and clothing are very many. When we come to such culture wants as the desires for books, pictures, foreign travel, and the like, the possible increase in the absolute number and variety of human wants is practically infinite. These wants may be directed toward the development of one's faculties and activities, rather

than toward the satisfactions of the senses. A thirst for knowledge, or the pursuit of literature and art for their own sake, may have for their objects the development of faculties, not sensuous gratification. While the awakening and the satisfaction of culture wants are both desirable and necessary, if life is to be made worth the living, the development of such tastes may take undesirable directions. Luxurious desires may be carried too far; and the constant increase of wants, even of wants desirable in themselves may lead to extravagance and prodigality.

II. Economic Goods.

§ 55. Everything which satisfies a human want is a utility or a good. The abstract noun "utility" means the power to satisfy wants. Economics treats of man's efforts to supply himself with certain utilities, or goods. These utilities may be either material objects or personal services. To such goods the term "wealth" is applied. In common usage wealth often means great riches, but such is not the sense in which the economist uses the word. To him the poor man's dwelling and the rich man's palace are alike wealth, in that they are both want satisfiers, or utilities. Our definition of goods and wealth serves to make clear one very important point. Nothing can be wealth except as it is able to satisfy a human want. The conception of goods or wealth, therefore, is purely relative to human needs. A change in men's wants may render much former wealth valueless, and con-

Utilities or goods.

versely. The passing away of the belief in magic made charms and relics worthless, while varying fashions in dress are constantly producing similar results.

§ 56. It is necessary now to give a more exact definition to the term "economic goods." We have seen that economic goods include both material objects and personal services, but not all such objects or services come within the scope of the definition. Some goods exist in such superabundance that men, without making any effort or sacrifice, find all wants for such objects completely satisfied. Such goods are free to all, no lack of them is ever experienced, and they are not objects of economic effort. Air, sunlight, and water are generally examples of such *free goods.* But many other things can be secured only by effort or sacrifice of some sort, for the reason that the supply of such utilities is limited. Such limitations may be due to the impossibility of increasing the number of the goods in existence, as in the case of old paintings and antiques; or to the fact that the supply of the commodity in question can be increased only by the labor of production. Utilities of which the supply is limited, as compared with human desires for them, are called *economic goods.* Men never experience any lack of free goods since all their wants for such objects are abundantly supplied. But in the case of economic goods, men experience constantly unsatisfied wants which they seek in some manner to satisfy.

Economic goods.

Economic goods, since they are limited in supply, can be obtained as a rule only by exertion or sacrifice

of some sort. For that reason they may usually be exchanged for other goods. Material objects may be transferred from one person to another. Man's faculties cannot be thus transferred, but the services which his faculties enable him to render may be exchanged for the services of others or for material objects. In so far as the exchange or transfer of personal services forms a part of man's economic activities, personal services must be regarded as economic goods.

Transferability of economic goods.

The utility, or the power which commodities possess to satisfy our wants, may arise in any one of four ways. The object may be fitted, as for example pig iron, to serve as the raw material for some desirable product. Such a commodity possesses *elementary utility.* Next, after undergoing changes in form, the pig iron may become a finished product adapted for man's use; and may then acquire *form utility.* Again, when transported from the forge or rolling mill to the place where some consumer may make use of it, the iron product acquires a *place utility.* Finally, some commodities may be most desirable only at certain times, as ice in summer, and fuel in winter. A good placed before the consumer at just the time when it is desired will possess a *time utility.*

Elementary, form, place, and time utilities.

The terms "utility" and "good" as used by the economist have nothing to do with the real desirability or moral estimate of the object in question, or of the want to which it ministers. Cer-

A caution.

tain wants may be undesirable or harmful in their gratification; but if men possess such wants, and demand such undesirable objects for consumption, those objects assume economic importance and must be considered economic goods.

III. The Consumption of Wealth.

§ 57. All goods are produced for the purpose of being consumed. By consumption the economist means the destruction of utilities. This takes place when goods are used up by consumers, who apply them to the purposes for which they were designed. Utilities may be destroyed also by the natural decay of goods, by the action of the elements, as in floods or tornadoes, or by wanton waste on the part of man. Usually when the term consumption is used, we shall refer to the rational destruction of utilities in the satisfaction of human wants.

The consumption of wealth.

It is important to note the difference between the consumption of durable goods and the consumption of perishable commodities. A book, a coat, or a house may yield a large number of satisfactions through many acts of repeated use. An article of food is able to yield but a single satisfaction in a single act of consumption, and may be called a perishable good. The book, the coat, and the house may be considered relatively durable goods, which are consumed only by a series of acts extending through a considerable period of time. Some goods, such as land, may be so used that their utility may never be

Durable and perishable goods.

destroyed; and may, therefore, be considered absolutely durable goods.

The consumption of wealth tends to produce positive pleasure or to avert pain. The pleasures produced or the pains averted may be either present or prospective, but they are the usual results of acts of consumption. The production of utilities, on the other hand, necessitates, in most cases, some pain or hardship. Disagreeable labor must be performed, or desired ease be given up, or some sacrifice be incurred. In their efforts to satisfy wants, men are constantly weighing the probable pleasures of consumption against the sacrifices necessary for the production of consumable wealth. A man's action is likely to take that direction in which he considers that the largest balance or surplus of pleasure over pain can be obtained. The older economists expressed this by saying that "every man desires to obtain additional wealth with as little sacrifice as possible." This fact will guide us in our study of the consumption of wealth.

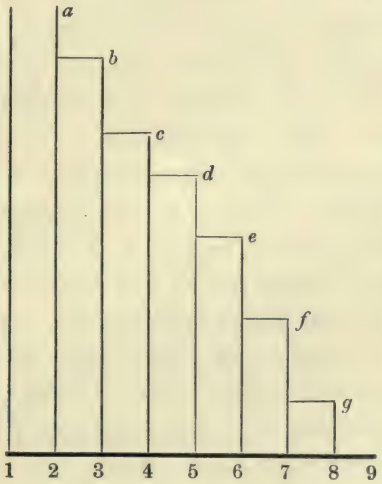
Consumption and production.

§ 58. Human wants are satiable. If a person consumes at any given time successive units or portions of a commodity, he finds that the later units produce less pleasure or satisfaction than the first. If enough of the commodity is consumed, a point may finally be reached at which the consumption of any more units ceases to produce any satisfaction whatever, and may even cause pain. This will be seen if we suppose a man to be supplied with successive pieces of bread. The first piece might serve

The law of diminishing utility.

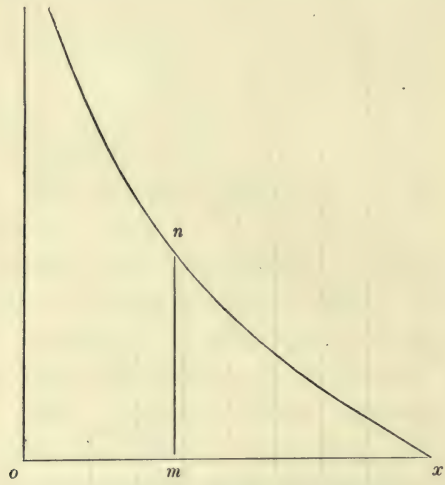
to appease the pangs of extreme hunger; and would, therefore, have a very high degree of utility. The second piece might be consumed with great pleasure, but it would not have the same intense utility that the first possessed. A third piece of bread might completely satisfy the man's desire for food at that time, so that a fourth piece would have no utility whatever for consumption at that moment. In this case, then, the second piece of bread has a smaller utility than the first, while the third has less than the second. After the third piece has been consumed, the point of satiety is reached.

This law is often illustrated by the following diagram: — **Illustration of the law.**



In this diagram the lines 1 2, 2 3, 3 4, 4 5, etc., represent eight units or pieces of bread. The pleasure derived

from the unit first consumed, 1 2, may be infinitely great, since this first piece may be necessary to preserve life. The second unit, 2 3, has a utility measured by the perpendicular line 3 *b*; and the parallelogram erected upon 2 3 represents the utility of this second unit. Each subsequent unit has a smaller degree of utility, represented by the several perpendicular lines. The utility of the eighth unit, 8 9, is nothing, because it is supposed that the point of satiety is reached after seven units are consumed. Now if the successive units are made very small, the diminishing utility of the commodity may be represented by a curved line, as in the following figure:



Here the utility of the first unit, *o*, is infinite; the utility of any unit, *m*, is represented by the perpendicular line, *m n*; while the last unit, *x*, possesses no utility whatever.

We must now distinguish between total and marginal utility. Each unit of the supply, until the point of satiety is reached at x, possesses a certain degree of utility represented in our diagram by a perpendicular line drawn at the proper point. The sum of the utility of all the units is the *total utility* of the entire supply, $o\,x$. On the other hand, the *marginal utility* is the utility of that portion or unit of the supply which is last consumed. In our illustration, x is the marginal unit of the supply, and the marginal utility has become zero. If, however, the supply should be reduced to $o\,m$ units, m would be the marginal unit; while the marginal utility would be represented by the perpendicular line $m\,n$.

Total and marginal utility.

At any given moment it is safe to conclude that if a person's supply of any commodity is increased, the marginal utility of the commodity will decrease. But if a considerable period of time passes, it is possible that the person's wants may expand, so that a larger supply at the later period may have as great a marginal utility as a smaller supply had at the former period. When different times are considered, the law of diminishing utility must be used with a great deal of caution.

Limitations upon the law of diminishing utility.

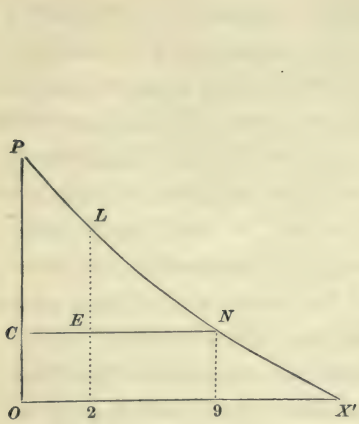
§ 59. In supplying their wants men consume commodities in a certain order. In selecting goods for consumption two things are considered: *first*, the utility of the goods; and *second*, the cost or sacrifice necessary to procure them. Those commodities will be selected first which

The economic order of consumption.

yield the largest surplus of enjoyment above the necessary costs. Suppose bananas and oranges to be offered for sale at the same price, say twenty cents a dozen. Then a person who prefers bananas to oranges will certainly purchase bananas. They have for him a greater utility than oranges; and, the cost being the same, will yield him a greater surplus of utility over costs. But now suppose that the person buys six bananas. Then it is probable that an additional half-dozen would have less utility for his personal consumption at that time than the first six bananas possessed. The diminished marginal utility of the larger supply of bananas might leave a smaller surplus of utility over costs than could be obtained by buying a half-dozen oranges. Hence it is possible that he may buy six oranges instead of buying an additional half-dozen of bananas. Now let us assume a second case. Suppose that the person prefers oranges to bananas; and suppose that an orange costs five cents, while bananas happen to be selling for a cent apiece. Under such circumstances, it is evident that the greatest surplus of utility over cost could be secured by purchasing bananas instead of oranges, unless the person's preference for oranges should be great enough to overcome the difference of four cents in the cost of the two kinds of fruit. Comparisons of this sort lie at the basis of the judgments formed by purchasers in a market.

A second illustration.

This principle may be illustrated by the following diagram: —



COMMODITY 1. — ORANGES. COMMODITY 2. — BANANAS.

In these figures the lines $O\,X'$ and $A\,X$ represent the entire supply of the commodities 1 and 2. The lines $O\,2$, $O\,9$, $A\,4$, $A\,6$, and $A\,8$ represent various amounts of the supply, of which 2, 9, 4, 6, and 8 are respectively the marginal units. The lines $O\,P$, $2\,L$, $9\,N$, $A\,B$, $4\,H$, $6\,K$, and $8\,M$ represent the utility of the various units of the supply, O, 2, 9, A, 4, 6, and 8. The curved lines $P\,X'$ and $B\,X$ represent the diminishing utility to a particular person of the successive portions of the supply. The lines $O\,C$, $2\,E$, $9\,N$, $A\,D$, $4\,F$, $6\,G$, and $8\,M$ represent the cost or sacrifice necessary to secure each unit of the supply.[1] Then the lines $C\,P$, $E\,L$, $D\,B$, $F\,H$, and $G\,K$ represent the surplus of utility over cost in the case of the units O, 2, A, 4, and 6

[1] For convenience of illustration we will assume the cost of all the units to be the same. Then the continuous lines $C\,N$ and $D\,M$ represent the cost of all units.

respectively. Now the person in question will select a certain number of units of commodity 2 first of all, since the first units of this commodity possess for him the larger surplus of utility over cost. He will not purchase more than $A\,4$ units of this commodity, however, before he finds that, beyond the marginal unit 4, additional units would yield a smaller surplus of utility over cost than the first units of commodity 1. Similarly, the person would not buy more than $O\,2$ units of commodity 1, since, beyond the marginal unit 2, additional units would yield a smaller surplus of utility than further purchases of commodity 2 would produce. Therefore he may choose additional units of 2 until, after reaching the unit 6, the surplus of utility over costs may be the same for the marginal units (2 and 6) of each commodity. How many additional units of each commodity the person in question may choose to purchase will depend upon the extent to which his means enable him to gratify his wants. In any case he would not carry his purchases beyond the points of supply represented by $O\,9$ and $A\,8$. At these points the marginal units (9 and 8) yield no surplus of utility over sacrifice; and the person would have no inducement to make additional exertion in order to secure an additional supply of either commodity.

The economic order of consumption.

We may, therefore, lay down these two principles concerning the order in which commodities will be selected for consumption: (1) Those goods will be first procured and consumed which yield the greatest surplus of utility over

costs. (2) In choosing between different commodities each person will endeavor to make the surplus of utility obtained from the marginal unit of one commodity equal to that obtained from the marginal units of all others. When the surplus of utility over costs obtained from the marginal unit of one commodity becomes less than could be obtained from one or more units of a second commodity, the second commodity will be purchased in preference to the first.

Every person, in the management of his expenses, is constantly making such estimates of the comparative utility and the comparative cost of all commodities which he purchases. It is seldom, however, that judgments can be made with the exactness presupposed in the diagram above given. We should remember, moreover, that different persons place very different estimates upon the utility of the same commodities. This makes it very difficult to theorize concerning the utility of goods to the general purchasing public. We can merely observe what prices other people are willing to pay for commodities, and then infer from these prices what the utility of the commodities is considered to be.

Caution.

§ 60. Having already distinguished between total utility and marginal utility, we must now notice that our estimates of the importance of commodities for the purpose of consumption always depend upon the marginal, not upon the total utility. An often quoted illustration will make this clear. A peasant has put aside three

The importance of a good depends upon its marginal utility.

sacks of corn which must last him until the next harvest. One sack he will use for food; a second must be kept for seed; the third is used for feeding poultry, which forms a pleasant but not necessary addition to his diet. What will be the utility of one sack of corn to such a peasant? This question can be answered by inquiring what the peasant would lose if he should be deprived of one sack of his corn. If this should happen, he would not go without food, nor would he be likely to sacrifice his seed for next year's crop. Probably he would sacrifice the poultry, since they represent the least important of the three classes of wants to which the three sacks of corn minister. It appears, then, that when the peasant's supply of corn amounts to three sacks, the real significance of a single sack is measured by the importance of the weakest want which any one of the three sacks may be used to satisfy.

A little reflection will convince any one that all our estimates of utility are based upon the utility of the last, or marginal, portion of the supply. The units first consumed may have an infinite utility. Thus the first portion of food consumed may save us from starvation. But when we have a large supply of bread, the importance of any single piece sinks to the level of the marginal or last piece consumed, which ministers to the least intense want which bread can satisfy. If our supply of bread should exceed our wants, the utility of a single piece would fall to zero. Therefore the marginal utility of a commodity, or the utility of the marginal unit of the supply of a com-

Summary.

modity, determines our estimates of the commodity's importance for purposes of consumption. In regard to total utility it may be well to add that, since the utility of the first units of the supply oftentimes is infinite, the total utility of many commodities is infinitely great. In no cases have we any accurate means of measuring or comparing total utilities. Final utilities we are able to estimate, first, by observing the final utility of commodities for our own consumption; and second, by observing what sacrifices or costs other people are willing to incur in order to procure different classes of goods.

§ 61. Some commodities are in the form of finished products ready at hand for consumption; others are in the form of raw materials and goods not yet ripe for consumption. From this fact arises the distinction between present and future goods. This distinction is of importance in the theory of consumption. Future pleasures and pains are usually undervalued in comparison with present. Goods which are available only in the future, or which minister to future not to present wants, are regularly undervalued in comparison with present goods. The sum of one hundred dollars obtainable only at some future date, may appear less desirable than a sum of ninety dollars which is immediately available. In this way future goods are usually discounted when compared with present satisfactions. This is due, not merely to the uncertainty of all future events, but also to the fact that all future pleasures and pains, however certain they may be, are more lightly regarded than present

Present and future goods.

pleasures and pains. Savage peoples are proverbially heedless of the future, and live mainly for the present enjoyment. In times of plenty they may consume gluttonously and wastefully the very food that may be essential to the preservation of life at a later time. Civilized people are far more provident, and pay far more heed to future needs. Nevertheless, the tendency to underestimate the future still remains.

§ 62. It is well to distinguish between productive and final consumption. All goods of whatever character are intended to minister ultimately to the satisfaction of some human wants. When a utility is destroyed by the act of a person who derives from it the satisfaction which it was intended to provide, we have what may be called an act of *final consumption.* On the other hand, many goods are intended to serve merely as raw materials for the manufacture of finished products, or as tools and machines by means of which finished products may be created. Raw materials are consumed when they pass over into the completed commodity, and tools and machinery are consumed as fast as they are worn out by constant use. All such destruction of materials and machinery may be called *productive consumption.* Such goods are destroyed, but their utility reappears in the utility of the finished product. Formerly it was customary to call the consumption of food by a laborer productive consumption, since it enabled him to produce more goods. But this usage exactly reverses the fundamental fact that consumption is the end of all eco-

Productive and final consumption.

nomic activity, while production is merely a means to that end. When a product reaches the consumer and is consumed, it has served its economic purpose ; and the economist need not attempt to go beyond this fact.

IV. Statistics of Consumption.

§ 63. There are now available figures as to the income and expenditure of a large number of American and European families, which give statistical proof of the facts above outlined concerning the order of consumption and the relative expansivity of various classes of wants. First, let us consider the facts demonstrated by Dr. Engel, an eminent Prussian statistician. These related to the cost of living in Prussia, and were as follows : —

Engel's law.

1. As the income of a family increased, a smaller percentage of it was expended for food.

2. As the income of a family increased, the percentage of expenditures for clothing remained approximately the same.

3. With all the incomes investigated, the percentage of expenditures for rent, fuel, and light remained invariably the same.

4. As the income increased in amount, a constantly increasing percentage was expended for education, health, recreation, amusements, etc.

These conclusions were drawn from the following table of statistics : [1]

[1] See ROSCHER, ii. 203; ELY, Economics, 244. Dr. Engel "has advanced the theory that it might be possible by a careful study of a suffi-

Items of Expenditure.	Percentage of the expenditure of the family of		
	A man with an income of from $225 to $300 a year.	A man with an income of from $450 to $600 a year.	A man with an income of from $750 to $1000 a year.
	Per cent.	Per cent.	Per cent.
Subsistence	62.0	55.0	50.0
Clothing	16.0	18.0	18.0
Lodging	12.0	95.0	12.0	90.0	12.0	85.0
Firing and Lighting	5.0	5.0	5.0
Education, Public Worship, etc.	2.0	3.5	5.5
Legal Protection	1.0	2.0	3.0
Care of Health	1.0	5.0	2.0	10.0	3.0	15.0
Comfort, Mental and Bodily Recreation	1.0	2.5	3.5
Total	100.0	100.0	100.0

§ 64. Subsequent investigations in the United States and in Europe show the substantial accuracy of these statistics by Dr. Engel. Such recent investigations are summarized in the Seventh Annual Report of the United States Commissioner of Labor, opposite.

Investigations by the labor bureaus of Massachusetts and of the United States.

These statistics show that about nine tenths of the income of very poor families are expended for the satisfaction of the mere existence wants, for food, shelter, and clothing. Nearly half of the income of such a family is expended for food alone. As the income of a family increases, its members prefer to

Conclusions.

cient number of family budgets for a period of years to construct a sort of *social signal service.* His idea is that changes in total expenditure and in expenditures for various items in a sufficient number of typical families could enable us to predict the coming of industrial storms."

PERCENTAGE OF EXPENDITURE FOR FAMILIES OF DIFFERENT INCOMES.

Object of expenditure.	Income under $200.	Income $300 and under $400.	Income $500 and under $600.	Income $700 and under $800.	Income $900 and under $1000.	Income $1200 and over.
United States.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Rent	15.48	14.98	15.15	15.60	14.96	12.59
Fuel	7.07	6.04	5.63	4.42	4.00	2.57
Lighting	1.01	.98	.97	.88	.74	.45
Clothing	12.82	14.14	15.27	16.33	16.84	15.71
Food	49.64	45.59	43.84	38.89	34.34	28.63
All other purposes	13.98	18.27	19.14	23.88	29.12	40.05
Europe.						
Rent	9 38	11.93	10.26	9.49	10.49	
Fuel	5.38	5.49	3.32	3.97	5.19	
Lighting	1.63	1 59	1.37	1.20	1.53	
Clothing	19.08	14.18	15.21	18.97	14.15	
Food	48.32	49 58	50.06	44.00	46.24	
All other purposes	16.18	17.23	19 78	22.37	22.40	

expend a constantly increasing proportion of their means for the satisfaction of culture wants. The desires for food, for clothing, and for shelter are seen to be far less expansive than the higher needs, which constantly claim a larger portion of an increasing income. Evidently, as the means of a family increase, a larger surplus of utility over costs can be secured by reducing the proportion of the income expended for existence wants, and by diversifying the objects of family consumption.

V. Economy in Consumption. Saving and Investment.

§ 65. By economy in consumption is meant securing the greatest amount of satisfaction obtainable from a given expenditure or destruction of utilities. This necessitates (1) a knowledge of the

Economy in consumption.

most advantageous uses to which a good may be devoted, and (2) economy in the application of the good to the chosen purpose. The importance of such a rational ordering of our consumption is well expressed by a recent French writer in the following words: "The human race . . . could increase its welfare almost as much by a better ordering of its consumption as by an increased production of wealth, and this without any real retrenchment in consumption."

Economy and a high standard of living.

It is highly desirable that men should develop their higher wants, and should have the means of maintaining a high standard of living. Rational economy does not imply the non-satisfaction of desirable wants, but rather means abstinence from useless or injurious expenditure, and the most complete utilization of the goods devoted to the satisfaction of necessary and worthy desires. These aspects of the subject of economy require some consideration.

Injurious consumption.

§ 66. Some kinds of expenditure produce effects which are directly pernicious to those who indulge in such forms of consumption. Anything of this sort, for instance intemperance, unfits a man for rendering to society the highest service of which he is capable; and is condemned in advance as both wasteful and immoral. More need not be said here upon this topic.

Luxury.

Other kinds of consumption are not in themselves directly pernicious, but may nevertheless be questionable. Luxurious expenditures are of this character. Every one knows that extravagance

and prodigality exist, and the careful observer will admit that these evils are not confined to any single social class. Yet it is very difficult to frame any general definition of luxury, or to establish any general principles by which what is commonly termed luxurious expenditure may be judged. We must admit that men of great genius or ability have much greater needs than other men, and that they may wisely incur expenditures which others might not be justified in making. Moreover, the luxuries of one time may become decencies or necessaries of the succeeding age. As Laveleye says, "A shirt for the body and a chimney in the house were great luxuries in the Middle Ages; to-day they are necessities even for the poorest." Furthermore, it seems probable that some expenditures that might be called luxurious tend to develop finer tastes and the finer arts, and may in this way produce beneficial effects. A certain amount of rational luxury is not to be indiscriminately condemned.

The question of luxury appears, therefore, to be a complicated one; nevertheless, it is possible to lay down certain general principles. First, it is certain that there exists in the world a large number of unsatisfied wants for the comforts, and even for the necessities, of life; in other words, multitudes of human beings are destitute of the means for satisfying most pressing wants. Every luxurious expenditure causes a sacrifice of the means, or the productive power, available for the satisfaction of other wants. The money that pays for the millionaire's palace might have built

Test for luxury.

an orphan asylum, or endowed a college. Since this is the case, we have the feeling that, in any instance of luxurious expenditure, the benefits derived from the outlay should be in some way commensurate with the sacrifice involved. If millions of dollars are lavished in ostentatious display during a hard winter, when multitudes of people are on the verge of starvation, we feel that there is an immense disproportion between the pleasure actually derived from such expenditure and the possible good that might have been accomplished with the resources thus squandered. While the law gives to every one the undoubted right to expend his property in whatever manner he may desire, yet there exists a growing feeling that the possession of wealth imposes upon a person the moral obligation of administering that wealth as a social trust. This obligation, moreover, is as binding upon the possessors of small incomes as upon those who enjoy great riches. This feeling was expressed by Ex-mayor Hewitt, of New York, in his speech at the recent dedication of the new buildings of Columbia University. Speaking of the university, Mr. Hewitt said: "It will not lack the means of usefulness, nor the opportunity of expanding its influence, when the rich men of our city realize the opportunity which it affords for making the millions which they control fulfill the duty imposed by the possession of wealth, and by which alone its possession can be justified." On these principles, luxurious expenditure can be justified only when its results are proportionate to the sacrifice involved. Excessive luxury is

a violation of the moral obligation incumbent upon the possessor of wealth to administer his property as a trust for the welfare of society.

§ 67. We have next to consider the question of economy in the use of goods devoted to the satisfaction of reasonable and desirable wants. Probably more loss is produced by wastefulness in this department than is caused by undesirable consumption. Economy in productive consumption will be treated of in the chapter devoted to production. At this point we shall be concerned mainly with economy in consumption.

Economy in the application of resources.

The statistics of family consumption previously presented show that families whose incomes range from $200 to $1200 per year, spend from 60 to 90 per cent of their incomes for the ordinary household expenses of rent, food, fuel, light, and clothing. These expenses fall, as a rule, to the direction of the wife and mother. Economy in the expenditure of from 60 to 90 per cent of the income of the ordinary family depends, therefore, mainly upon the skill and intelligence of the women who administer the affairs of the household. Here "a penny saved is a penny earned," and the practice of household economy has been hitherto the chief economic function of women.

Economic importance of housekeeping.

It has been demonstrated that there is a great deal of waste in family consumption, the real extent of which is not at all appreciated. The chief item of loss is in connection with the expenditures for food. If we place the aver-

Waste in consumption of food.

age income of an American family at $500, — and it will not greatly exceed that figure, — then nearly $250 of this amount is expended each year for food. Waste occurs in any or all of the following ways: (1) Needlessly expensive foods containing little real nutriment are used; (2) there is a failure to select the foods best suited to the needs of the family; (3) a great deal is thrown away which ought to be utilized; (4) bad preparation of the food causes it to lose much of the nutriment which it does contain; (5) badly constructed ovens diffuse heat, instead of confining it, and cause enormous loss of fuel. We shall state less than the truth if we estimate that fully one fifth of the money expended for food is absolutely wasted, while the excessive expenditure often fails to provide adequate nutrition. In this manner, ten per cent of the income of the average family is uselessly squandered. This means a waste of $50 out of each family income amounting to $500.[1]

Loss by fire.

Destruction by fire forms another enormous item of economic waste. Most buildings are examples of what Mr. Atkinson[2] calls "combustible architecture," and progress in slow-burning or fireproof construction has been very slow. The methods of insurance companies have frequently put a premium upon incendiarism, while ignorant or willful carelessness

[1] See ATKINSON, The Science of Nutrition; ATWATER, Food Waste in American Households.

[2] See ATKINSON, Slow-Burning Construction, Our Enormous Loss by Fire; also, THOMSON, Waste by Fire.

often enough completes the work of destruction. In 1886 the property destroyed by fire in the United States was valued at $100,000,000. Eight years later, Mr. Atkinson found that "the masters of combustible architecture" had improved upon their own work, and that the "last year's ash heap of the United States" represented property worth $150,000,000. Further illustrations are not needed to show the possibility of vastly increasing the satisfactions enjoyed by our people without increasing the production of wealth in any degree.

§ 68. Having treated of spending, the first use which can be made of acquired wealth, we now come to a consideration of saving, the second use to which wealth may be put. Saving involves much more than the mere act of spending less than one receives, and its ultimate consequences require considerable explanation.

Saving.

Saving may take the form of merely setting aside or storing up either money or useful commodities in such a way that they remain idle. This is called hoarding, and may or may not be a useful and necessary way of providing for the future. In early times, or in periods when property has been insecure, this has been the principal way in which saving has been effected. Hoarding may be carried to such an extent as to lead to scarcity of the goods offered in the market. But in modern times, most saving takes a second and very different form. Nowadays people save wealth mainly by investing it in some productive enterprise. With security of property assured, men prefer to

Two forms of saving.

invest their savings in productive industry rather than to hoard surplus wealth. The reason is that a permanent income may be secured in this way. The investment may be made directly by the person, or indirectly through a bank, to which the work of investing savings may be intrusted. Investment, evidently, is the very opposite of hoarding. It does not withdraw goods from use, but invests them where they may aid to increase future production. While to some extent hoarding still takes place, for the most part saving means useful investment, and not withdrawal of wealth from use.

Saving and spending.

Let us compare the results of saving and spending. The French economist Leroy-Beaulieu has contrasted the two as follows: "The man who saves, in case he invests his savings directly or indirectly, spends as much and makes as much work as the prodigal, or the man who spends his entire income. But the object and the result of the spending and the work are different." Saving, "in place of making work for upholsterers, hair dressers, lace makers, meat cooks or pastry cooks, makers of fine carriages, etc., makes work for masons, ballasters, vine-dressers, machine builders, and other workers of the same sort." Saving, then, usually means spending; but it means spending for the future, not for the present. Saving means, therefore, not a decrease in the demand for commodities; but usually a demand for future goods instead of present goods, for the tools and materials necessary to future production rather than for the products of present or past industry.

Our analysis of the results of saving enables us to see at once the absurdity of the idea that reckless and wasteful expenditure can be approved because it makes trade good. Saving makes trade good and causes a demand for products just as truly as does spending. But spending inconsiderately leads to the destruction of utilities; saving, to the ultimate increase of production. Yet many intelligent people and many important newspapers often excuse extravagance and profusion on the ground that they make trade good, and give employment to labor.

"Spending money to make trade good."

Two reasons make saving a desirable habit in any people. *First*, it cannot be repeated too often that the first economic duty of every man is to make himself a self-supporting, independent member of society. In order to do this it is necessary to save the means for supporting one's self in times of sickness or lack of employment, and also to make provision for old age. Saving may also be necessary in order to maintain the unity of the family upon the death of the father. But a *second* powerful reason makes saving a desirable thing. Modern economic life depends upon the extensive use of capital in production. Through the means of capital, man is gradually subjugating nature and substituting natural forces for human labor. Economic progress demands the constant creation of new capital, and capital-formation involves a willingness to prefer future goods to those which contribute alone to present enjoyment.

Desirability of saving.

VI. Demand.

§ 69. We have seen that human wants are the cause of man's economic activities. Human wants create a demand for certain commodities and services which can be secured only through labor or sacrifice of some sort. In order to meet such a demand for commodities and services, all economic activities are directed. It will be well to close this chapter by a general statement of the law of demand.

Demand.

Since human wants are satiable, a single unit of any commodity will possess for any person or group of persons a degree of utility that constantly decreases as the supply of the commodity is increased. At any moment, moreover, the importance which men will attach to any single unit of the supply will depend upon the utility of the last or marginal unit. Men will demand first those commodities whose marginal utility most exceeds the cost or sacrifice necessary to obtain them. They will cease to demand any commodity as soon as its marginal utility ceases to exceed its cost.

Demand and satiable wants.

In obtaining desired commodities we are commonly called upon to sacrifice money, and we need to base our statement of the law of demand upon this fact. Money confers upon its possessor a general purchasing power, and a unit of money has to each individual a certain importance based upon its ability to procure satisfactions of all sorts. A man with an annual income of $500 knows that one

Sacrifices measured by money.

dollar represents one five-hundredth part of his total power each year to purchase commodities. The significance of a dollar to a rich man is generally much less than its importance to a poor man. As a person's supply of money increases, the marginal utility, or want-satisfying power of the marginal unit, of money constantly tends to become smaller. Nevertheless, every one has a certain general idea of the importance to himself of the general purchasing power represented by a dollar; and every one is constantly called upon to estimate the sacrifice which the expenditure of a dollar may involve. We may say, therefore, that demand is determined by a comparison of the marginal utility of commodities with the marginal utility of money. Men purchase those commodities whose marginal utility most greatly exceeds the marginal utility of the money required to purchase them.

§ 70. We call the demand for a commodity large or small as the number of units of that commodity demanded by the public is larger or smaller. Now the extent of demand will vary according to changes, (1) in the marginal utility of the commodity, (2) the money cost, and (3) in the means or wealth of the purchasers or consumers. This may be illustrated by the three following cases: —

The general law of demand.

1. If the price of sugar remains unchanged, say ten cents per pound, then the number of pounds that will be demanded will depend solely upon the utility of sugar. At one time it may be that consumers will use 10,000 pounds of sugar before the marginal utility of a

single pound falls so low that no one would care to sacrifice ten cents in order to purchase an additional pound. Now if tastes change, it may happen that consumers will buy 15,000 pounds before the marginal utility of a single pound falls below ten cents.

2. On the other hand, let us suppose that the utility of sugar remains unchanged. At a price of ten cents a pound, we have seen that 10,000 pounds will be demanded by the consumers. Now if the price be reduced to five cents a pound, the number of pounds demanded may increase to 15,000. The reason for this increased demand is that the reduction in the marginal utility of a pound of sugar, caused by the increase of the supply to 15,000 pounds, is offset by the reduction in cost or sacrifice. The reduced cost leaves a surplus of utility over sacrifice, although the marginal utility has decreased.

3. Suppose, finally, that both the marginal utility of sugar and the price remain the same, but that the wealth of the consumers is increased. Then the marginal utility of the five cents required to purchase a pound of sugar will decrease for the majority of the consumers. Under such circumstances more than 15,000 pounds may be purchased before the marginal utility of a pound of sugar falls below the marginal utility of five cents. Thus the increase in the wealth of the consumers may serve to increase the demand for sugar to 20,000 pounds at the price of five cents a pound. It would have exactly the same effect as a decrease in the price.

§ 71. The law of demand may be summed up. *First*,

the demand for any commodity will vary directly as its marginal utility, the cost being assumed to remain the same. *Second*, assuming the utility to remain the same, demand will vary according to the price. *Third*, changes in the wealth of the consumers act exactly like changes in price. An increase of wealth lowers the marginal utility of money and increases demand, while a decrease of wealth has precisely the contrary effect.

Summary.

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THOMSON, Waste by Fire.

CHAPTER V.

THE PRODUCTION OF WEALTH.

I. Production in General.

§ 72. The production of wealth does not mean the creation of material things which did not previously exist. Human powers are unable to create matter, and the utmost that man can do is to produce utilities. Production, therefore, means changing the form or the relations of matter so that it becomes better able to satisfy human wants. Wood or iron may be changed into the form of houses or machines; seeds may be placed in the ground where natural forces act upon them and result in the growth of plant life; Dakota wheat may be transported to Liverpool, gaining increased utility by the change of place; but in all such cases material objects and natural forces are merely so adjusted that they acquire a new power to satisfy wants. Production may be defined, therefore, as "the creation of utilities by the application of man's mental and physical powers to the physical universe, which furnishes materials and forces."[1]

Definition of production.

Every increase of utilities, however, is not the result of human activities directed expressly for that purpose.

[1] See ELY, Outlines of Economics, 90.

We have seen that changes in human wants and tastes may increase the want-satisfying power of goods, or may destroy it. The utility of a piece of land may be increased by the natural growth of the community, when no labor is exerted directly to increase the usefulness of the particular tract of ground. Various accidents which in no way result from human effort may suddenly increase the utility of many kinds of wealth. All such ways of creating utilities are not to be considered economic production.

Wealth creation which is not production.

It has sometimes been thought that some forms of industry are more productive than others. But our analysis of the nature of production has shown us that the farmer, the manufacturer, the railroad employee, and the merchant are all alike engaged in rearranging or adjusting materials in such a way that an increase of utility results from their labors. The manufacturer and the railroad engineer are assisted by natural forces to the same extent as the farmer. Moreover, such workers as teachers, doctors, lawyers, judges, policemen, soldiers, domestic servants, and the like, directly contribute to the increase of utilities, and should be considered productive laborers. All useful labor is productive of increased enjoyment, that is, of increased utilities. Only misdirected or inefficient labor is unproductive.

Productivity of various industries.

§ 73. The labor of production involves a certain amount of toil which may be more or less disagreeable, or even painful, according to circumstances. Some kinds of labor, as the labor of the

Production and sacrifice.

scholar or of the artist, may appear to be pleasurable in themselves. But in most such cases it will be found that the pleasure comes from the results of the labor, rather than from the bodily and mental exertion. For the majority of producers, labor involves bodily fatigue or even pain, and also the sacrifice of desired leisure and enjoyments. So true is this that it is claimed with reason that, if the fear of starvation and want should be removed, most men would not feel any incentive sufficient to induce them to carry on the labor of production. It should be emphasized that a certain amount of well-directed labor is a necessary discipline for mankind, and that "an idle brain is the devil's workshop." When all is said, however, the fact remains that production necessitates sacrifice. On account of this, men are constantly seeking to produce wealth with less labor. This effort to economize labor is one of the principal forces that lead to economic progress.

Practically all production requires a certain amount of time. Many weeks have to elapse between seed-time and harvest, several months may be required to convert trees into a house, while many years may pass before the construction of a railroad or a canal can be completed.

Production requires time.

§ 74. A treatment of economic production should include a discussion of the production of each of the two kinds of economic goods, namely, material goods and personal services. Yet a few words only need be said concerning personal services. The first wants which any society must sat-

The production of personal services.

isfy are the wants for subsistence and shelter. At an early period certain personal services will be desired; and soldiers, lawgivers, priests, and domestic servants may appear in any society. The demand for personal services will be likely to increase as fast as the industry of any people becomes more productive, so that a smaller proportion of the total population has to be employed in the production of material goods. The general tendency of economic progress is to enable a smaller number of workers to produce the material wealth necessary for civilized life, and to set free a larger number of people to render personal services of all sorts.

II. The Factors of Production.

The three factors.

§ 75. Economists have recognized three factors of production, — nature, man or labor, and capital. Man and nature are original or primary factors, while capital is a secondary or derived factor.

Nature as a factor of production.

§ 76. In a general way nature may be said to assist in production by furnishing man with standing-room, with materials, and with chemical and physical forces. The motor forces of nature have been utilized by man principally in the forms of the muscular strength of animals, the motive force of winds and streams, the expansive force of steam, and the motive force of electricity.

A detailed classification of nature's contributions to production may next be presented. *First*, all productive

industry may be influenced by atmospheric or climatic conditions. These affect not only the animal and vegetable productions of a country, but also the vigor and character of the inhabitants. *Second*, rivers, lakes, and seas should be mentioned. These may facilitate the transportation of persons and products; and may furnish man with fish, corals, sponges, etc. Rivers may also supply the water power that turns the wheels of many productive industries. *Third*, we must notice the contributions of the land surface of the earth. The land contributes to production standing-room, plants and animals, mineral treasures hidden for the most part below the surface, and the mineral and vegetable elements that form fertile soils. Mere situation is often of the greatest importance, as is seen in the case of a city or country located at an important point along the routes which the commerce of the world is obliged to follow.

Classification of nature's contributions.

Of the contributions of nature to production some are appropriable, while others practically cannot be reduced to ownership by individuals or by societies. Land is appropriable, as well as the products secured from the land. Air and sunlight are for all practical purposes not appropriable, except in so far as the enjoyment of them may depend upon access to certain pieces of land. The waters of the earth's surface cannot be appropriated, except in cases where access to them depends upon the control of land. Inland waters and the borders of the ocean to the extent of three miles seaward are appropriated by the nations that control

Some of nature's contributions are appropriable.

adjacent territory. The appropriable contributions of nature are actually reduced to private ownership as soon as they become scarce relatively to human wants. When population is scanty, and men lead a nomadic life, land is not held as private property. But as numbers increase, and unoccupied land becomes scarce, the soil is brought under private ownership.

Influence of nature upon man's economic life.

Some writers have attempted to explain the whole of man's social as well as his economic life by reference to the influence of the natural surroundings of each community. In this way it is said that the inland plains give rise to a pastoral form of economic life, that the seashore causes people to live as fishermen, and that forests produce the tribes of hunters. From the natural affiliation or combination of these three forms of simple economic societies, all complex or civilized societies are derived. But such a view exaggerates, as it is very easy to do, the extent to which natural surroundings determine the life of a people; and it neglects the fact that man in a thousand ways may modify his environment. Man can reclaim land from the sea, can irrigate arid lands, can tunnel the Alps, and can construct a railroad through the Rocky Mountains or across the Andes. The economic development of our own country has been very greatly influenced by natural conditions. The infertility of the soil of New England compelled that section to utilize its forests for ship building, and its rapid streams for power for manufacturing. The fertile soil of the South marked that section out as an agricultural region. The rivers of the Mississippi

Valley helped to extend settlements, and to facilitate the rapid growth of the interior of our continent. In general, it may be said that the tendency of economic progress is to free man more and more from the influence of nature. It took nearly two hundred years for English colonists to advance their settlements from the Atlantic coast to the valley of the Mississippi. But the steamboat and the railroad enabled the people of the United States to spread over the territory between the Alleghanies and the Pacific in three quarters of a century.

§ 77. Labor is human exertion or effort directed toward the creation of economic goods. It is possible to distinguish between physical and mental labor. In so doing one should remember that even the rudest manual labor requires a certain amount of mental effort, however slight; while mental labor may require the use of the eye, the ear, the tongue, and always of the brain. Between the work of the ditch digger and that of the philosopher there may be endless varieties and degrees of activity; but all kinds of labor involve both physical and mental exertion, and differ from each other only in the degree in which the mental or the physical elements predominate.

Labor a factor of production.

It will be found useful to classify the different forms of labor, as follows: —

1. Discovery and invention.

2. Occupation, or the procuring of the gifts of nature; *e. g.*, gathering wild plants, hunting wild animals, extracting minerals from the earth.

Classification of different kinds of labor.

3. Production of materials by utilizing natural forces

so as to produce changes of form; *e. g.*, agriculture, stock breeding.

4. Manufacture, or transforming raw materials into useful products.

5. Transportation of commodities and persons. Place utilities are produced in this way.

6. Exchanging products and services. All kinds of commercial enterprises are included here.

7. Organizing and superintending productive industries. An efficient organizer and superintendent is the most useful, hence most productive, man in a factory.

8. Prevention of loss; *e. g.*, firemen, lighthouse keepers, etc.

9. Rendering personal services of an economic character. This includes domestic servants at one extreme and members of the learned professions at the other. Those persons who make, interpret, and enforce laws are also included. Such services are productive directly of utilities which have an economic significance. Indirectly they may lead to a great increase of material wealth; *e. g.*, the services of the scientist or educator.

The last two censuses of the United States showed that the workers of this country were distributed among the various occupations as follows: —

Occupations.	1880.	1890.
Agriculture	7,670,493	8,466,251
Personal and Professional Services . .	4,074,238	5,304,829
Trade and Transportation	1,810,256	3,325,962
Manufacturing, Mechanical, and Mining Industries	3,837,112	5,638,619
Total Persons in Gainful Occupations	17,392,099	22,735,661

The labor of production involves sacrifice, and even pain. Yet labor is a necessity, for without it "mankind would necessarily perish off the face of the globe even if all soils were fertile and all climates temperate." Labor is not, however, an end in itself, but merely a means to the end of satisfying human wants. Many persons often act on the principle that whatever makes work for men to do is a blessing, and whatever lessens labor is an injury. From the point of view of the workman directly affected by it, a labor-saving machine is often regarded as an enemy; but from the point of view of the general public, cheaper methods of production are a very desirable thing.

Economic importance of labor.

The efficiency of a laborer depends, *first*, upon his individual characteristics, and, *second*, upon the wisdom with which his labor is employed and directed, — that is, upon industrial organization. Postponing for a time the second factor, we will now consider individual endowments and abilities as causes affecting the efficiency of labor. In this particular the most marked differences exist between various groups of laborers. The inherited strength or vigor of the workman is one important cause of his efficiency or inefficiency. Men of one race may exceed by one hundred per cent men of another race in mere muscular strength or in capacity to endure toil. Acquired knowledge, skill, and dexterity are second causes of efficiency. Many workers show an utter inability to learn to do anything in a really thorough manner. Good food and comfortable shelter are third requisites of effective labor.

The efficiency of labor.

Underfed laborers lack vigor and energy, while unhealthy lodgings enfeeble the workman and cause disease. The mental and moral qualifications of the laborer form fourth factors of efficiency. Intelligent and conscientious workmen require less superintendence, can be intrusted with work for which any others are unsuited, and prove most effective and least wasteful. Finally, the social esteem in which labor is held and the social position accorded to the laborer are factors of the utmost importance. Where labor is considered honorable service, and where all opportunities, political, economic, and social, are open to the man who renders most effective service, laborers will display energy and ambition which will vastly increase the value of their work. The contrast between the United States and many other countries is most marked in this particular.

§ 78. The number of laborers in any country will depend upon the growth of population, and the question of population deserves attention at this point. The natural growth of population depends upon the proportion which births bear to deaths. In a community of 10,000 persons, 300 births or deaths per year will give a birth or death rate of 30 per thousand. If both the birth rate and death rate are 30, then population will remain stationary. If the birth rate should increase to 35 and the death rate fall to 25, the annual increase of population would be 10 per thousand, or one per cent. In 1892 the birth rates of different European countries varied from 40.3 in the case of Hungary, to

The supply of labor.

22.1 in the case of France; while death rates varied from 35 in the case of Hungary, to 17.8 in the case of Norway. Thus Hungary's large birth rate was offset by her large death rate, so that the net increase of population was only 5.3 persons for each thousand inhabitants. On the other hand, Scotland, Norway, and Germany, the countries showing the largest net increase of population in that year, had smaller birth rates but much smaller death rates, as follows: —

Country.	Birth Rate.	Death Rate.	Net Increase.
Scotland	30.8	18.5	12.3
Norway	29.6	17.8	11.8
Germany	35.7	24.1	11.6

At the present moment the population of civilized countries is generally increasing. Within one hundred years the population of Europe has increased from 175,000,000 to more than 357,000,000. At the same time the birth rate shows a constant decrease. This has been more than balanced, however, by a large decrease of the death rate, so that the net result has been a gain in population. In the United States vacant lands have afforded abundant room for millions of immigrants, so that the growth of numbers has been remarkably rapid.

Limits upon growth of population.

Manifestly the increase of population is limited by the ability of mankind to procure from the earth necessary subsistence. During the last century the productivity of industry has so increased that the lands of civilized countries are able

to support largely increased populations in far greater comfort than smaller numbers formerly enjoyed. Wealth has increased much faster than population. On the other hand, it may be said that the present rate of increase of numbers cannot be maintained forever. If the population of the world should continue to double every one hundred years, as that of Europe has actually done during the past century, there would be ultimately more people in the world than could find mere standing-room, to say nothing of subsistence. Population does not, however, increase indefinitely in any such geometrical ratio. In uncivilized countries famine and pestilence, if no other cause, keep down numbers to the limits imposed by the available supply of food. The majority of civilized men prudently restrict the growth of population; so that it may happen, as has been the case during the last hundred years, that wealth of all kinds increases faster than numbers.

The standard of living.

A word should be said concerning the influences which cause the population of civilized countries to adjust itself to the ability of the people to increase the production of wealth. Each class of people in any society is accustomed to enjoy a greater or less amount of the comforts or luxuries of life. The amount of comforts or luxuries customarily enjoyed by any class of men forms the "standard of living" of that class. Prudent people will not marry and assume the burden of the support of a family until they possess incomes that will enable them to maintain themselves in the same degree of comfort that they have been accus-

tomed to enjoy. In proportion as people are prudent enough to insist on maintaining their customary standard of living, or even to desire to raise their standard, the number of marriages, and hence the numbers of the population, will be adjusted to the limits imposed by the amount of wealth possessed by such persons.

The standard of living may be raised or lowered.

The standard of living is not fixed, but may be either raised or lowered. Educational influences which arouse new and higher wants tend to lead people to demand an increased share of comforts or luxuries, and tend to deter men from assuming the burdens of a family until assured of the means of maintaining the higher standard of living. On the other hand, there are considerable numbers of people in any community who raise families which they have no prospect of being able to support in a manner which will be considered comfortable or decent, even by members of the social class to which they belong. Such people constitute a large part of our pauper classes, and have no one but themselves to blame for the suffering caused by their own reckless conduct. In other cases, through misfortune or a commercial crisis a family which was once accustomed to a high standard of living may be unable to maintain such a standard, and may suffer want through no fault of its own. When this happens, the great danger is that the family may become accustomed to the lower plane of living, may lose ambition to improve its position, and may remain permanently on a lower level of economic life.[1]

[1] See WALKER, The Wages Question, 81–88.

Many interesting facts illustrate the manner in which the growth of population is adjusted to the ease with which the available wealth of the community will permit a family to be supported. Early in this century wages in England were low, and the laboring classes generally expended more than one half of their incomes for bread. Under such circumstances statistics showed that the number of marriages increased when wheat was cheaper, and decreased when it became dearer. Later on, wages increased very greatly, so that the laborers spent a smaller proportion of their incomes for bread, and more for other things. Then it was noticed that the marriage rate no longer fluctuated as the price of bread changed, but that it varied according to the general commercial prosperity of the country. Another illustration may be taken from English experience. Early in the present century, the Poor Laws of England were so unwisely administered as to make it far too easy for families to secure poor-relief. This made it unnecessary for laborers to exercise even the former degree of prudence in contracting marriages, and the result was a very rapid growth of numbers. Moreover, as the laziest and least enterprising people took most advantage of the poor-relief, this increase of numbers occurred in the least desirable elements of the English population. A great deal of other experience confirms the conclusion that it is always dangerous to relieve poverty in any manner which destroys each man's responsibility for the support of his family. Unwisely managed charity merely allows the families of the shift-

Illustrations.

less and worthless to increase; and this, too, at the expense of the industrious and enterprising people who are taxed for the support of charitable institutions. Those who have had most experience in managing benevolent enterprises are the most strenuous in denouncing unwise and indiscriminate poor-relief as a crime against society.

Economic progress and the standard of living.

Economic progress is generally marked by an increase of wealth. Whenever such an increase occurs, a question of the utmost economic importance arises: What will be done with the increased wealth? It may be used to support a larger population at the same standard of comfort which previously existed; it may be used to support the same population in greater comfort; or, finally, it may be used partly to increase the standard of living and partly to increase numbers. In the present century the growth of wealth has served to double the population of civilized countries, and to more than double, perhaps, the comfort in which people live. If all increase of wealth is used for supporting a largely increased population, little or nothing is gained so far as the general welfare of each individual is concerned. Whenever wealth increases, and incomes increase, it is of the utmost importance that a wise use should be made of the new wealth. If it is used to raise the standard of comfort, there will be a permanent gain in economic prosperity. If, on the other hand, it serves merely to increase numbers, society will remain at the same economic level which it formerly occupied.

In the United States, highly unusual circumstances have tended to obscure the fact that population has to be adjusted to the incomes of any people, and that there are ultimate limits beyond which at any given time an increase of population is undesirable. Our numbers have been confined to the limits set by income, but the ease of earning a large income has been so great that population has seemed capable of increasing without limit. We have had a smaller population than was absolutely needed in order to subdue our vast unoccupied territory, and to develop our natural resources to the best advantage. Although the most desirable portions of our arable lands are now occupied, we yet have room for many millions of additional inhabitants. So long as every newcomer could be given a farm, each increase of numbers might mean simply one more laborer engaged in agriculture; and no increase of population could result in a lower standard of living. But such a condition of things cannot last forever, and population cannot continue to increase as rapidly as it has in the past. In fact, the rate of increase has perceptibly declined in recent years. From 1870 to 1880 the percentage of increase was 30.08, a smaller percentage than was ever before known except during the decade which included the Civil War. But from 1880 to 1890 the percentage of increase fell still further to 24.86 per cent. In the older sections of the United States, where population is more dense, there has been a marked decrease in the birth rate. As fast as the other

Circumstances of the United States are highly exceptional.

portions of the country become more thickly settled, the same thing will be noticed there. Our population will continue to grow for a long time to come, and our standard of living may continue to rise. But the rate of increase will grow smaller, because the elevation of the standard of living will require prudence in adjusting the number and size of families to available income.

§ 79. Man and nature are the original factors of production. But in all labor except the most primitive forms, a third factor, capital, is needed. The hands of man unaided would hardly be able to do more than to gather wild fruits and nuts, and to secure a few of the gifts which nature yields to the labor of mere appropriation. Most economic goods cannot be secured by the *direct* application of man's efforts to his physical surroundings. It is necessary for man to apply his labor in an *indirect* manner. If he will first fashion for himself fish nets and hunting weapons, he may then secure fish and game that he otherwise would be unable to procure. If he will first devote some labor to the manufacture of shovels and plows, he may place seeds in the ground in such a manner that natural forces will cause them to yield an abundant harvest. If he will first construct a water wheel or invent a steam engine, he may harness the motive forces of water and steam, and may apply them to the production of results which no amount of unaided human effort could possibly achieve. It is evident that in all such cases men adopt an indirect method of satisfying their wants. They first produce tools and

Capital as a factor of production.

machinery, and then utilize these instruments in their efforts to secure desired want-satisfiers. In this way men first labor to secure various instruments of production, and then by means of such appliances, are enabled to satisfy their wants more fully than would otherwise be possible.

Indirect or roundabout methods of production.

Indirect methods of production are far more efficient than direct methods, because indirect production may enable man to utilize all the available materials and forces of nature. Such materials as the useful metals could never be brought into a form adapted to any human use without the aid of instruments and appliances of indirect production. Even such a material as wood could never be reduced to a condition of greatest usefulness without indirect methods. Many of the forces of nature cannot aid very greatly the processes of direct production. Heat and moisture cannot act most efficiently upon the seeds unless the soil has been properly prepared by the use of suitable instruments. Air, water, steam, and electricity are powerless to assist in the labor of production unless men construct suitable appliances to bring these forces into operation in the right manner. By an indirect process, therefore, man can secure the fullest coöperation of nature, and can vastly increase the production of wealth.

Definition of capital.

Capital, then, consists of all the intermediate products which man creates for the purpose of using them in the production of finished consumption-goods. It is produced for the reason that its use

serves to economize human labor, and to utilize fully natural materials and forces. The wealth which men produce may, therefore, be divided into *consumers' goods*, ready for final consumption, and *producers' goods*, or intermediate products designed to be used in the production of future wealth. In this chapter we have to consider capital as a factor of production merely. Our definition, therefore, must be a definition of productive or social capital, and must explain the part which capital plays in the process of indirect production.

§ 80. The concrete forms which productive capital may assume are as follows : —

Forms of productive capital.

1. Productive improvements upon land, such as fences, drains, fertilizers, etc. The land in itself is a gift of nature, not a product of human industry. It is not created by man to serve as an aid to indirect production. Productive improvements may be counted as capital so long as they can be distinguished from the land itself. Fertilizers or drains become, in a shorter or longer time, indistinguishably merged with the land.

2. Buildings, such as factories or workshops, devoted to the purpose of aiding in the process of indirect production.

3. Means of transportation, such as roads, canals, and railways.

4. Raw materials, such as iron, wood, cotton, silk, and wool, which are consumed in the act of production, but re-appear in the product.

5. Auxiliary materials, such as coal, lubricating oils, and bleaching materials, which aid the productive process, but do not re-appear in the product.

6. Tools and machines. Within the last century these have become the most important form of capital, in many respects.

7. Domesticated animals used in production. Breeds of domestic animals have been so improved by scientific breeding that they are distinctly a product of human industry.

8. Money, weights and measures, and scales and balances. We shall soon see that these objects are a most important means of carrying on capitalistic or roundabout production.

9. Commercial stocks of finished products or consumers' goods. These do not include consumers' goods in the hands of the final consumers. Strictly speaking, finished products should not be called consumers' goods until they reach the final consumers. Capitalistic production would be impossible if capitalist-producers did not produce goods for distant markets and for a future season's consumption. Wheat must be produced in one season, and a sufficient stock must be carried over to last until the next harvest. Spring dress goods must be produced several months in advance of the season when they are demanded. Agricultural implements, made in America and exported to Australia, may be several months in reaching the final consumer. Merchants perform the important social function of carrying all such commercial stocks of goods as require weeks or months to pass from producer to consumer. Commercial or mercantile stocks of finished products are an indispensable aid to the process of capitalistic production, and fall under our definition of capital. They are really producers' and not consumers' goods. They are materials to which time and place utilities are being added by the merchants who forward them to consumers.

10. Capital used by persons who render personal services. The instruments of the surgeon, and the books and scientific apparatus of the student are examples. A fuller classification would include at least the following objects under this form of capital: (*a*) all scientific and professional instruments and apparatus; (*b*) churches, theaters, public halls, and all buildings necessary for rendering personal services;

(*c*) court houses, jails, forts, warships, government buildings, and all the appliances necessary for public functions. All these are means of producing indirectly services which could not be rendered directly without such appliances.

§ 81. Something more should be said concerning two things which have been excluded from the above list of the concrete forms of capital. Land was excluded because it is primarily a gift of nature, and not a product of human industry devoted to the purpose of capitalistic production. Yet it should not be forgotten that independent productive improvements are capital. Moreover, such improvements are so common that land often ceases to be a mere gift of nature. Much land owes part of its usefulness to labor expended upon it. Nevertheless, certain properties of land are always exclusive gifts of nature, and not the result of human labor expended directly in their production. Some soils are naturally more fertile or more lasting than others. A north slope is less fertile than a south slope. The location of a farm with respect to the market, or of a city lot with respect to the center of business activity, is wholly independent of labor devoted directly to that purpose. Some economists have included knowledge and acquired faculties among the forms of capital. But this is unnecessary, since all such things are included in the efficiency of labor, another factor of production. More than this, such faculties are a part of man himself, not a part of his possessions. He may sell the use of his faculties, but cannot part with them. For

Land and acquired faculties are not productive capital.

these reasons knowledge and acquired faculties are not to be considered capital.

§ 82. Many writers have held that food and clothing, the subsistence of laborers, are to be considered capital, since they enable the workers to produce more wealth. But we have already seen that food and clothing in the hands of the laborers are consumption-goods, and that when a consumption-good reaches the consumer it is finally destroyed. Further than this the analysis of the economist need not go. Food and clothing that are in the hands of manufacturers and merchants, however, form part of the mercantile stock of the community, and are to be regarded as capital. Such commodities, although they may be finished products, are more properly to be considered producers' goods, to which time and place utilities are being added by the process of forwarding the goods to consumers.

Capital and subsistence.

We have already seen that production requires time. In the simplest forms of production, when man merely appropriates a natural product, such as wild fruits, fish, or game, only a very short interval may elapse between the exertion of human labor and the attainment of the desired object. On the other hand, the production of an agricultural product may require several weeks, while the construction of a canal may require many years. In all cases where indirect production is carried on, a certain time must elapse before the formation of capital will be rewarded by the increased product of consumers'

Mercantile stocks and capitalistic production.

goods. During the process of production the laborers must have food, shelter, and clothing. They are provided with these things out of the stocks of products which merchants are constantly forwarding from producers to consumers. Laborers themselves seldom keep on hand any large amount of subsistence-goods. They expect to receive, from time to time, wages which may be expended in purchasing food and clothing out of the mercantile stocks of completed products which exist in all civilized communities. In modern society middlemen, or merchants, perform the important functions of accumulating subsistence-goods and all other commodities at the seasons when they are produced, and then of distributing them to consumers as fast as demanded.

§ 83. We may distinguish between fixed and circulating capital. Fixed capital consists of objects which serve to assist several acts of production. Circulating capital is consumed in a single act of production. All raw materials are circulating capital; tools, machinery, and buildings are fixed capital. Since the wonderful inventions which caused the Industrial Revolution, the use of machinery in all branches of production has increased at a constantly accelerating speed. This has caused the proportion of fixed capital used in modern production to increase at a rapid pace. Another important distinction is between free and specialized capital. Free capital exists in such a form that it may be applied to any one of many industries; specialized capital is in-

Other classifications of the forms of productive capital.

vested in such a way that it assumes a fixed form, and cannot be withdrawn for investment elsewhere. Coal, lumber, iron, and steel are relatively free to be invested in one or many different kinds of industry. Railroads, canals, blast furnaces, and carpet looms are examples of specialized capital which is nearly worthless for any purpose except one single form of production.

The process of capital-formation.

§ 84. Many reasons make it desirable for us to have a clear conception of what is required for formation of productive capital. The first thing that is necessary is that men should perceive that the indirect or capitalistic method of production will enable them either to produce more goods than would be possible by direct production, or to produce goods which direct methods would never enable them to secure. Obviously, the second step is for men to undertake the labor of collecting the materials and fashioning the tools necessary for the process of indirect production. The production of the various forms of capital is, therefore, the second step in capital-formation. But this step will not be taken unless men are willing to work for future products, available only after capital has been created and has been used to produce consumers' goods. In other words, it is necessary to labor for future enjoyments instead of present, to prefer a greater quantity or variety of future goods to a smaller number of present satisfactions. Capital-formation requires, therefore, abstinence from present satisfactions and the willingness to labor for products that will be available only in the future. Economists have expressed this idea by saying

that capital is the result of abstinence, as well as of production.

All capital is the result of production, but the work of capital production is actually performed under two different sets of circumstances. *First*, a farmer or a mechanic may produce capital for use in his business by building fences, digging drains, and improving fields, or by constructing a workshop and making tools. *Second*, capital may be produced by laborers who are hired to make it for other people. This takes place when a person saves a portion of his income, and invests the savings in a productive enterprise. Such a person may hire laborers to make tools and machines, or to build and equip a factory. He may buy shares of a business corporation, and thus turn his savings over to be invested by its managers. Again, he may place his savings in a bank, and allow them to be invested by the officials of that institution. In all these cases, what the person really does is to use his savings for the purpose of hiring laborers to produce various forms of productive capital. Savings banks have a peculiar importance, since they accumulate very small deposits from many depositors and secure large capitals for investment purposes. In the year 1894 – 95 the savings banks of the United States held deposits amounting to $1,810,597,023. This sum belonged to 4,875,519 persons, and represented an average deposit of $371.36 for each depositor.

Methods of capital-formation.

We have seen that the production of capital will not take place unless a man prefers to labor for future goods

rather than for present. Working for future pleasures requires abstinence from present enjoyments. This is true whether a person produces capital himself, or saves out of his income a surplus with which he purchases productive capital.

Abstinence and the inducement to saving.

A controversy has arisen concerning the amount of abstinence that is involved in saving. It is very evident that a person with an annual income of $500 will have to sacrifice the enjoyment of many present pleasures in order to save $100 each year. On the other hand, it has been denied, sometimes with great ridicule, that the savings of the rich man require any real abstinence to be incurred by him. Thus Ferdinand Lassalle, the socialist, wrote: "The ascetic millionaires of Europe! Like Indian penitents or pillar saints they stand on one leg, each on his column, with straining arms and pendulous body and pallid looks, holding a plate toward the people to collect the wages of their *Abstinence.* In their midst, towering up above all his fellows, as head penitent and ascetic, the Baron Rothschild!" But, as we have used the word, abstinence means desisting from some present pleasure in order to procure some future result. It does not imply that a rich man has to live abstemiously in order to save even large amounts of money. It means simply that when a millionaire builds a cotton factory instead of a palace or a yacht, he sacrifices present to future enjoyments. He may save $100,000 more easily than a poor man saves $100, but abstinence from present goods is necessary in the one case as in the other. Since saving does, therefore,

require abstinence or the sacrifice of present pleasures, it follows that the amount of saving which people will practice will vary according to the difficulties of, and the inducements to, saving. Security of invested property is the first and most important inducement. Whenever such security is destroyed, little saving is carried on. A fair rate of interest on invested capital is another inducement. Yet it cannot be shown that there is any minimum rate of interest that will absolutely stop all saving. On the other hand, high rates of interest are sure to lead to an increase of the supply of productive capital. A third inducement to saving is the desire to provide for the comfort and integrity of one's family. A very low rate of interest will not deter a father from providing for the future support of his family in case of his death. We conclude that saving capital does involve a certain degree of abstinence, and that the amount of saving will vary directly as the inducements offered.

Capital is maintained and increased only by constant investment.

Social, or productive, capital can be maintained only by constant investments of new capital. Raw materials are continually being used up; tools and machines wear out in the course of time; factories, railroads, and canals require constant repairs. Each year a portion of the savings of any people must be devoted to replacing capital destroyed during the last productive period. Thus existing capital would rapidly diminish if saving should cease to be practiced. Stocks of productive capital can be increased only by making good the annual loss, and then investing additional capital in new enterprises.

LITERATURE ON CHAPTER V.

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CHAPTER VI.

THE PRODUCTION OF WEALTH.

(*Continued.*)

I. Organization of the Factors of Production.

§ 85. A Robinson Crusoe may apply labor and capital to land, and may carry on a purely isolated process of production. But in economic society the production of wealth is a social process; and we have next to consider the social organization of the three productive factors, land, labor, and capital. We shall find that production requires the coöperation of the individuals that compose any economic society; and that it is a coöperative, therefore a social, process.

Production a social process.

§ 86. The simplest form of coöperative or associated production is seen in the association of a number of persons to produce a result which the efforts of a single individual could accomplish less easily, or perhaps could not accomplish at all. When all the men in a community join in raising the frame of a house, or in harvesting a field of corn, we have an instance of simple associated production.

Simple associated effort.

§ 87. The division of occupations is a second form of coöperative production. This occurs within a family when the men attend to outdoor work, and the women to indoor work. Or it takes place

Division of occupations.

within a community when certain men devote themselves mainly or exclusively to the trade of the smith, the carpenter, or the shoemaker, and perform all such work for the other members of the society.

§ 88. A third and more complicated form of association is seen in what is technically called the division of labor. By this is meant the division of the process of producing a commodity into a number of small parts. Each laborer is intrusted with the performance of some one or two parts of the process. In this way the manufacture of a pair of shoes, a sewing machine, a watch, or a needle, may be divided into fifty or one hundred separate processes. The division of labor has been carried so far in the modern factory that any reader is able to find for himself many illustrations of this minute subdivision of the work of production.

Division of labor.

The introduction of the division of labor has had many beneficial effects, which have been discussed by all economists since the time of Adam Smith. It assigns to each laborer a single process which he is called upon to repeat day after day until he acquires great skill and dexterity in his work. It saves time which would be lost if the workman should be compelled constantly to change from one process to another. It enables almost every one to find some work which he is able to do, although he may suffer from some physical disability. Finally, it reduces production to a series of comparatively simple processes, which can be easily studied and often improved. In this

Advantages of the division of labor.

way invention has been greatly stimulated, most inventions taking the form of greater or smaller improvements upon details of the productive process.

Yet certain disadvantages are sometimes found to grow out of the division of labor. The workman who is confined to a single process often finds his work exceedingly monotonous. Unless he cultivates other interests, his faculties are likely to become narrowed, and he is likely to be less intelligent. Again, the division of labor confines workmen to a few routine operations. Then, if thrown out of the accustomed branch of employment, they often find difficulty in learning another trade. Finally, the employment of women and children in many lines of industry has been made possible by the division of labor. Women and children are able to operate many kinds of machinery, and have often displaced men. In factory towns it has happened that fathers have been thrown out of work, while wives and children have taken their places at the mills. The division of labor has been found an indispensable condition for the progress of modern industry. A wise policy will seek to diminish all the disadvantages which may arise from it, while retaining its great benefits. Opportunities for education and recreation will counteract whatever monotony of occupation the division of labor produces. The labor of women and children may be abolished in certain cases where it is especially detrimental to the health of the workers or to the welfare of the family, while in other cases it may be permitted under adequate restrictions.

Disadvantages of the division of labor.

§ 89. The exchange of products underlies the last two forms of associated production. The division of occupations cannot take place unless the smith, the farmer, the carpenter, and the shoemaker devise some method of exchanging the products of their respective labors. The division of labor cannot be carried very far until there is an organized system of markets. In these markets merchants bring together the products of all branches of industry in such a way as to enable the men who produce large quantities of various small commodities to find a market for their wares. Modern industry, therefore, is based upon the fact that each man produces large quantities of salable commodities which he himself could never consume, and then depends upon other producers to furnish him with supplies of consumers' goods suited to his wants. This interdependence of all producers upon the markets where they sell their products or purchase their supplies has been carried farthest in those industries which have become localized in a few regions. The people of England draw food and raw materials from almost all quarters of the earth, and depend upon distant markets for the sale of their manufactured products. In the United States the manufacture of textiles is concentrated in New England, New York, New Jersey, and Pennsylvania; while these states depend upon the South or the West for their raw materials and breadstuffs. Thus one community is dependent upon the products of others, and a territorial division of labor is carried out. Such a localizing of industries enables each region to devote its labor to those branches

Exchange of products.

of production for which it has the greatest advantages. The total production of the world is enormously increased by such a localization of production. The exchange of products is a part of the process of production, but it requires detailed treatment in a subsequent chapter.

§ 90. A fifth form of associated production is seen in the coöperation of the factors of production. The persons who control the supplies of land, of labor, and of capital must coöperate in the establishment of business undertakings or enterprises. Sometimes it happens that one man may own both land and capital, and may perform all the necessary labor of production. This is the simplest way to secure the coöperation of the three factors of production, and is very common in the United States, where so many farmers cultivate their own land with their own capital and labor. On the plantations of the South another form of organization formerly existed. The planters owned their land and capital, and also owned the laborers. In both of these cases the coöperation of the productive factors is secured by simple methods, but the organization of business enterprises is often much more complex.

Coöperation of the productive factors.

Such a complex form of business organization is required whenever separate classes of persons control the supplies of labor, of land, and of capital required for the establishment of an industrial enterprise. At the present day we have a large class of persons who supply labor but nothing else.

Complex organization. The employer.

Another class supplies capital, while land may be supplied by still a third class, the landlords. The work of securing the coöperation of laborers, capitalists, and landlords has fallen to a class of employers or undertakers of business enterprises.[1] The employer, or undertaker, has become a person of the greatest economic importance. He is constantly seeking for favorable opportunities to establish business enterprises, he assumes the responsibility of investing capital and hiring land, while he employs and superintends the work of a number of laborers. On his good judgment and business ability the efficiency of the productive process mainly depends. His function is altogether distinct from that of the capitalist, the landlord, or the laborer. They may coöperate in establishing the enterprise, but upon the employer the responsibility of undertaking and conducting the business primarily depends. The *entrepreneur* may own the land upon which the enterprise is established, he may contribute a part or all of the capital used in production, he may even labor with his own hands; but his function as *entrepreneur* is wholly distinct from his functions as landlord, capitalist, or laborer. We shall next study the various forms of business undertakings, or the various methods in which *entrepreneurs* exercise their functions in establishing and managing productive enterprises.

§ 91. *Entrepreneurs* may secure the coöperation of land, labor, and capital, by the following methods: —

[1] The word "undertaker" originally meant a man who organized and managed a business on his own responsibility. In place of "undertaker" the French word *entrepreneur* has been commonly used.

1. The single *entrepreneur* system. In this a single employer, contributing all of the capital or borrowing a part, owning or hiring the land used, and employing a sufficient number of laborers, establishes and conducts a business on his individual responsibility.

The forms of business undertakings.

2. Next comes the common business partnership. Two or more men divide the work of business management, and jointly assume the risks incident thereto. This form of undertaking is advantageous when the business requires more capital than any partner alone could have contributed, or when the cares of management need to be divided. The partners agree to divide profits or losses in certain proportions, and are jointly and severally liable for all the debts of the firm to the extent of their entire fortunes.

3. A third form of undertaking is the modern business corporation. The older corporations were formed generally by a number of persons who were empowered by law to act as an individual for certain purposes, and to maintain a continued existence, beyond the life of the actual associates, by providing for a succession of members. A church, a university, or a charitable institution can best be organized in this way. Such a corporation is in the eyes of the law an artificial person. Its charter of incorporation confers upon it certain specific powers, and within these limitations the members of the corporation act as one person. Thus they may acquire or sell property, may sue and be sued. Beyond the specific powers conferred by its charter, however, no

corporation has a right to go. Such an action would be declared by the courts to be *ultra vires*, that is, beyond the powers conferred upon the corporation. Moreover, the charter might be declared to be forfeited on account of such a violation. The modern business corporation is regularly a joint-stock company. Its capital is divided into shares, often of $100 each, which are transferable at the option of each shareholder. Only the owners of the shares of the capital stock are members of the corporation. Such a joint-stock company is a convenient form of business undertaking when a large capital is required. Many men may be willing to invest small amounts of money in an enterprise in which no one of them would wish to risk his entire fortune. Many of the earliest joint-stock companies were not incorporated, and were merely a form of partnership. Such companies have now become the most important kind of corporations. They may be formed by a special act of legislation, or by complying with a general law authorizing groups of persons to form themselves into corporations, organized for certain purposes, under certain conditions. Their charters are either perpetual or limited to a term of years. Where corporations are given valuable privileges, it is very important that the charters should end after terms of thirty or forty years. The modern joint-stock company, therefore, is regularly a corporation, and has become the most common kind of corporate organization. One important feature of such business associations distinguishes them in a marked manner from other forms of business undertaking. The

members of joint-stock companies were originally liable for the debts of the companies to the full extent of their fortunes. In modern times their liability has often been limited to the amount of money that they invest in the stock of the company. Under this system of limited liability, if a thousand persons contribute $100 each to form a capital stock for a business corporation, each one is liable only to have the $100 contributed by him seized for the debts of the business. The stockholders lose, if the business is unsuccessful, all the money invested; but they do not risk their entire fortunes by entering into such an enterprise. Sometimes the stockholders are liable for double the amount of their investment. Thus, the stockholders of one of our national banks are liable, in case of the failure of the bank, to be assessed for a sum equal to the par value of the shares which they hold. Joint-stock companies with limited liability are well adapted to undertake large enterprises, especially when there is considerable chance of failure. Individual employers or partners would seldom take the risks which their unlimited liability would compel them to assume if they invested their capital in many business enterprises. Moreover, as the capital of a joint-stock company becomes larger and the number of stockholders increases, any single stockholder has little influence in the management of the enterprise, and has less knowledge of the affairs of the company. It is, therefore, unfair to hold him liable for the debts of the corporation to the full extent of his fortune. Furthermore, the capital needed for many large enterprises cannot be

obtained unless the liability of the investors is limited to the amount of their investments. During the last fifty years the growth of business corporations has been marvelous. Enterprises that require large investments of capital almost invariably assume corporate form. Many simple business partnerships have been converted into corporations, partly in order that the partners may cease to be liable for firm debts to the full extent of their fortunes. Great abuses have undoubtedly attended the growth of corporations, but they have been on the whole a useful and necessary form of economic organization. The great need of the times has been for the large capitals required to build railroads, to construct huge steamships, and to equip giant factories. This need the joint-stock companies have supplied. Moreover, they have possessed the further merit of making it possible to invest small sums in one or more shares of corporation stock, so that small savings have been accumulated in a manner which has made them available for the largest enterprises. One more point should be noted. Adam Smith, writing in 1776, argued that corporations could never be managed as efficiently as business partnerships, since the hired managers of corporate enterprises controlled, not their own money, but the capital of other people. For this reason he argued that they would generally be wasteful and negligent. In this criticism Smith undoubtedly put his finger upon a real difficulty, but a difficulty, nevertheless, which has been in large part overcome. Corporations have learned to select managers from tried and faithful servants, who

have often acquired a professional pride in the success of the business. They offer large salaries as rewards for efficiency; while the managers may own stock of the company, and thus have a direct interest in the business. Yet many corporations incur heavy losses through wasteful management, and no remedies have been found for many of these cases.

4. A fourth form of undertaking is seen in what is technically called coöperative production. Coöperation, in this limited, technical sense, is an effort to dispense with the employer, and to leave the management of a business to the workmen. Laborers have sometimes combined to supply their own capital, and to establish business enterprises on their own responsibility. Workmen acquire in this way the same interest in the success of the undertaking which partners have in the success of their business. This often leads them to do more and better work, and thus increases the efficiency of the organization. On the other hand, the success or failure of a modern business depends as much upon able management as upon faithful workmanship. Coöperative enterprises are usually managed by the workmen themselves, or by committees chosen from their number. Such a divided direction has so far proved less efficient than the business partnership or the corporation, in which the management can more easily be concentrated in the hands of one man or a small number of men.

5. A final form of undertaking is the management of business by the State. The United States Government

manages the postal business, many of our towns own their systems of water works, while a few own and manage gas and electric-lighting works. Government enterprise will require discussion in a subsequent chapter.

§ 92. A sixth form of associated activity underlies all the forms of productive enterprise which have been previously described, and marks the process of production as a distinctly social process. The importance of the part which the State takes in the production of wealth can be most clearly shown by an enumeration of some of the cases in which governmental activity is exercised.

Participation of the state in production.

1. The State endeavors to protect its citizens against external violence. Unless security from external attack is assured, life and property are not safe, and the productive resources of a nation cannot be developed. England's immunity from invading armies during the great Napoleonic wars enabled her to outstrip by fifty years' development all her European rivals.

2. The State aims to maintain order, and to protect persons and property from domestic violence. Between the thirteenth and eighteenth centuries, the King's peace was maintained in England firmly enough to enable her wool-raising industry to become the greatest in the world. In the other countries of Europe lawlessness was so common as to make it almost impossible for such an industry to be carried on.

3. The State makes possible and regulates the holding, exchange, inheritance, and bequest of property. The right of property is the right of exclusive disposal

over a thing, within certain limits fixed by the laws of the State. Many people are inclined to regard it as a "natural right," that is, an absolute, inalienable right, not to be questioned for any reason whatsoever. As a matter of fact, the right of property can be shown to be an historical product, gradually developed and constantly modified as men have emerged from barbarism to a condition of civilized life. There was a time in the history of all European peoples when practically all possessions belonged to the clan or tribe, not to the individual. Private property was developed first in the case of personal belongings and the products of man's labor. Gradually, and within times of which we have historic record, the right of private ownership was extended to land. The exchange of property between individuals, and the rights of inheritance and bequest, have been narrowly limited by law, and have varied widely among different peoples. In all places property rights have been defined, limited, and finally protected by law in such a manner as has seemed most expedient. Private property has been so long established among us that it is easy to commit the error of mistaking it for something that has always and necessarily existed, and in its present form. While it has proved, on the whole, a highly desirable and useful institution, we must not shut our eyes to the facts that it has always been limited by considerations of social expediency, and that it has often been modified. A few instances will show to what extent a man's right of disposal over his property is limited by law. *First*, all property is held subject to the right

of the State to take a part of it in the form of taxes. *Second*, property is limited by the State's right of eminent domain, under which the State may take property for public purposes, compensating the owner for its loss, however. *Third*, the owner of property may not use it in such a manner that it becomes a public nuisance, or for a purpose opposed to public policy. *Finally*, property may be forfeited to the State, or a portion of it taken in the form of fines. In many ways the rights of transfer, of bequest, and of inheritance of property are clearly defined and limited by law. We are now ready to consider the economic importance of private property for the production of wealth. It has been found that men will not engage in production in any efficient manner unless they are secure in the enjoyment of the products of their labor. Through the establishment and protection of property rights, the State furnishes men with the greatest incentive to diligent effort. Only through coöperation of various sorts can production be made at all large and copious. The division of labor, the exchange of products, and the voluntary coöperation of landowners, capitalists, and laborers in forming a business undertaking, all presuppose the recognition and protection of the property rights of individuals. In defining and safe-guarding property rights, the State creates the indispensable conditions of all effective production.

4. The State determines the conditions and the manner of making contracts, and then enforces the faithful performance of such agreements. The exchange of prod-

ucts and the organization of business enterprises by landlords, capitalists, employers, and laborers could hardly be carried on, and could never have reached their present state of development without a strict enforcement of contract agreements between buyers and sellers, or between employers, on the one hand, and laborers, capitalists, and landowners, on the other.

5. The State performs many services indispensable for the production of wealth, which private individuals never would perform in a satisfactory manner. The coinage of money, the regulation of weights and measures, and the construction of roads, lighthouses, harbor improvements, and ocean and river dikes are a few examples of such services.

II. Stages in the Development of Production.

§ 93. We can distinguish five stages in the development of the process of wealth-production.

1. The hunting and fishing stage. In the lowest grade of economic development, wealth is produced mainly by hunting or fishing, by labor of mere occupation. Little capital is used, and it consists of a few simple tools and weapons. Famine is of frequent occurrence whenever supplies of fish and game become scarce. Population is sparse, since much land is required to furnish fish and game sufficient to support a single person. Slavery seldom or never exists, since slaves could be made useful only by putting weapons in their hands, a process dangerous to the masters. Fishing tribes, when situated on the

The five economic stages.

shores of navigable waters, may develop into commercial peoples. The American Indians were mostly hunters and fishermen at the time of European colonization. In pioneering the way for the advance of civilization, the European settler often had to adopt the same method of securing a living.

2. The pastoral stage. The second period of economic development is marked by the fact that men learn to rear and domesticate herds of animals, and to depend chiefly upon their herds for food and clothing. The production of economic goods increases; and some persons acquire considerable wealth, which consists mostly of sheep and cattle. Slavery appears, and captured enemies are often employed in the peaceful labor of pastoral industry. Pastoral peoples are usually nomadic, wandering around in search of the best pastures. In the United States cattle raising has long been a typical frontier industry, which gradually makes way for agriculture and manufactures.

3. The agricultural stage. The next advance is made when men learn to raise plants as well as animals. More capital is used in production, and the coöperation of nature is secured to a much greater extent. When the cultivation and improvement of the soil begins, people settle down on definite tracts of land, and cease to live a wandering life. Private property in land then originates. The production of wealth increases, so that a given area of land can support a largely increased population. Slavery often assumes large proportions, since men prefer to impose upon slaves the hard labors

of agriculture. Subordinate to agriculture and cattle raising, hunting and fishing may be pursued. In agricultural communities some division of occupations may be found, particularly in the case of wood and metal workers.

4. The manufacturing and commercial stage. At this point greater attention is given to manufacturing into highly finished products the raw materials secured by the hunting, fishing, pastoral, agricultural, and mining industries. This work requires a much larger amount of capital, and leads to a separation of trades. The division of labor may also be introduced; but manufactures are carried on mainly by hand, aided only by the motive power of animals, wind, and water. Commerce now becomes an industry of prime importance. When men live by agriculture each community is self-sustaining, and requires few commodities produced in other places. With the growth of hand trades, communities begin to show different capabilities for producing various kinds of goods; certain industries become localized in regions that have the greatest advantages for producing them; and an exchange of products begins on a wider scale. The growth of commerce leads to the extended use of money to facilitate exchanges, which had previously been carried on by barter. At the same time the rise of manufactures and commerce stimulates the growth of cities, which now become manufacturing and commercial centers. In antiquity the most flourishing states of Greece and Italy reached the manufacturing and commercial stage. In 1750 the

leading countries of Europe were in this period of development, as were also the largest and most populous of the English colonies in America.

5. The industrial stage. This stage was reached in the time of the Industrial Revolution. England led the way, followed by the United States and various European countries. It is characterized by the vast increase of power manufacture; first steam, then electricity being utilized. Transportation facilities are revolutionized by the use of steam, and international commerce rapidly increases. Exchanges are effected as much through the means of credit as of money. The employment of power in manufactures vastly increases the use of capital, while business is conducted on a much larger scale. Household manufacturing industries are replaced by factories; small factories tend constantly to be replaced by gigantic enterprises; and the business corporation becomes the common form of industrial organization. As we are now living in the industrial stage, the remainder of this book will be devoted mainly to an explanation of its characteristics and tendencies.

III. Freedom in the Establishment of Productive Undertakings.

§ 94. In modern economic society, employers, capitalists, landlords, and laborers are, to a large extent, free to coöperate in establishing productive undertakings. In the absence of legal restraints, labor and capital are freely invested in those lines of business which promise the largest

Freedom of investment of labor and capital.

returns. If any profession or trade is not adequately supplied, remuneration will be so high as to induce a sufficient number of new enterprises to be established to meet the demand. On the other hand, when any line of business becomes over-supplied, capital and labor will sooner or later seek investment elsewhere. In this manner the productive forces of society are distributed among different branches of production in proportions roughly corresponding to the needs of the public. In European countries such freedom of investment did not exist at the close of the last century. In France, up to the Revolution of 1789, governmental restrictions and oppressive regulations made by exclusive corporations rendered it almost impossible for any save a privileged few to carry on manufactures or commerce. In England, until the Industrial Revolution, the investment of labor and capital was restricted by guild regulations and by laws that hindered the movement of laborers from one parish to another. In general, it can be said that individual enterprises or business partnerships were freed from restrictions earlier than corporate undertakings. Until the last forty or fifty years, both in England and the United States, corporations were chartered only by special acts of legislation. The bestowal of charters became an act of legislative favor or of political privilege. Members of one political party often found it impossible to secure a corporation charter when the other party was in power. A great advance was made when general laws were passed making it possible for any persons, upon complying with necessary

requirements, to associate themselves in a corporation. At the present time some of our states allow charters to be granted only under general laws, and the tendency is everywhere to restrict the granting of special charters. In a few instances the establishment of productive enterprises is still limited by law. The United States prevents private parties from engaging in the postal business. In towns and cities such enterprises as gas, electric lights, and water works are carried on either by the cities or by private corporations which have received exclusive franchises and privileges from the municipal governments.

IV. Cost of Production.

§ 95. It will be useful for us to make a careful analysis of the different elements that may enter into the cost of production of a commodity. Since we are now considering production as a *social* process, we must analyze the cost *to society* of producing various kinds of wealth. This can be done by asking, What does society sacrifice in order that the productive process may be carried on? The different elements of sacrifice that may enter into the social cost of production are: —

Analysis of cost of production.

1. The destruction of natural agents. Many kinds of production may be carried on without appreciably lessening the number or usefulness of the natural agents that assist the process. A windmill or a water wheel may be used in such a manner. But in many cases some gifts of nature are consumed during the pro-

ductive process, and in such a way that the number or usefulness of the available natural agents is lessened. This occurs, for instance, whenever coal is consumed in generating steam or electricity. The industries of England each year consume a very appreciable portion of the coal supply of the country. In agricultural industry the principal natural agent, land, may be improved by careful cultivation; but in some cases the fertility of the soil is decreased. In the United States our great staple crops of tobacco, cotton, corn, and wheat have taken from the soil a far larger amount of the vegetable and chemical elements necessary for the growth of plant life than has been restored to the land in the form of fertilizers. In general we can say that mining industries gradually lessen man's available supply of natural agents. Agriculture, fisheries, and forestry may be rationally conducted in such a manner that our supply of natural agents will not be lessened, and may even be increased.[1]

2. The destruction of capital. Practically all production necessitates the destruction of a certain amount of capital, both fixed and circulating. The cost to society of the capital consumed in production is made up of two elements, labor and abstinence. When capital is consumed, society loses first of all the labor expended in producing the materials or tools thus destroyed. Second, it should be noticed that absti-

[1] Read MARSH, "The Earth as Modified by Human Action," for a noble plea for economy in the use of all natural agents. See also JEVONS, "The Coal Question."

nence, or waiting, was necessary for the formation of the original capital, and will be necessary for its replacement.

3. Labor. Not only is labor required to produce capital, but also it must be exerted in using capital for the purpose of further production. The social cost of labor will depend upon two elements: (*a*) the character and intensity of the labor, whether intellectual or physical, skilled or unskilled; (*b*) the length of time during which labor is exerted.

V. The Investment of Labor and Capital upon Land.

§ 96. In productive industry it is necessary to invest labor and capital upon land. Now it is a common fact of experience that in certain industries, agriculture, for instance, much less labor and capital can be invested upon each acre of land than in other industries, such as manufactures and commerce. We have next to investigate this question of the extent to which it is possible to invest labor and capital upon a definite tract of land.

The law of diminishing returns.

§ 97. First we will consider agricultural industry. At any given time every farmer knows that there is a point beyond which it will not pay him to invest labor and capital upon each acre of land. An investment of five dollars per acre may yield a return of twelve bushels of wheat. Possibly an investment of ten dollars might have resulted in a product of twenty-four bushels. But the crop secured from a single acre of land cannot, at any given time, be made

The law of diminishing returns in agriculture.

to double indefinitely by doubling the investment of labor and capital. To continue our illustration, suppose that fifteen dollars had been invested upon the given acre of land instead of ten dollars. Then it is probable that the crop would have been increased, but it is not likely that it would have amounted to thirty-six bushels. Suppose the investment of fifteen dollars to yield a crop of thirty bushels. Then the results of investing the three different amounts of capital upon the given acre of land would have been as follows: —

Investment.	Crop.	Average Yield to each Dollar of Labor and Capital.
$5	12 bushels	2.4 bushels
$10	24 bushels	2.4 bushels
$15	30 bushels	2.0 bushels

It is evident that, on the piece of land in question, an investment of fifteen dollars will secure a larger yield than an investment of ten dollars; but that the average yield secured by each dollar of labor and capital is less than it would have been had the investment been limited to ten dollars. It would have been better if the third five-dollar investment had been made upon another piece of land. This is an illustration of the method in which a law of diminishing returns operates in agriculture. As the investment of labor and capital upon an acre of land increases, a point is finally reached beyond which an increased investment would yield a larger aggregate but a smaller proportionate return. If this

were not true, we should continue to raise all our agricultural produce from a few acres of land, and would never have taken the trouble to reduce other fields to a condition suitable for cultivation.

It will be noticed that care was taken to say that the law of diminishing returns is true *at any given time*. In any season, when labor and capital are invested in the cultivation of land, agricultural methods and skill have reached a certain stage of advancement, and will not be materially changed during that season. They are, therefore, relatively fixed; so that the economist can say that, *at any given time*, investments of labor and capital can be carried only to a certain point before they will begin to yield a diminishing return. On the other hand, if we compare one season with another, or compare one period of years with another, no law of diminishing returns may be found to hold true. Scientific agriculture is each year making it possible to invest more capital upon land without encountering a point of diminishing returns. Continuing our illustration, we may suppose that improved methods of cultivation are originated, and that these improvements make it possible to invest fifteen dollars upon each acre of land, and to secure an average yield of thirty-six bushels per acre. The law of diminishing returns, therefore, is true *only at a given time*. At one season it is possible to invest only ten or fifteen dollars in cultivating each acre of wheat before arriving at a point of diminishing returns. Improved methods of farming may, however, after a period of

The effect of improvements in agriculture.

years make it possible to invest fifteen or twenty dollars on each acre, and to secure a proportionately increased return. Bearing these considerations in mind, we can state the law of diminishing returns as Professor Marshall has formulated it: "An increase in the capital and labor applied in the cultivation of land causes in general a less than proportionate increase in the amount of produce raised, unless it happens to coincide with an improvement in the arts of agriculture."

Implications of the law of diminishing returns in agriculture.

We have seen elsewhere that the population of civilized countries is increasing, and is likely to increase for a considerable time to come. This fact will make it necessary to raise more agricultural products as fast as numbers increase. The law of diminishing returns has sometimes been considered to imply that, when all lands now vacant shall have become occupied, men will secure increased supplies of agricultural products only by applying more and more capital and labor to land that will yield a constantly diminishing return. Such a conclusion is wholly unwarranted. From year to year the progress of agriculture is making it easier than ever before to secure the products of the soil. There is reason for thinking that scientific agriculture is only in its infancy, and that in the future its progress will be much more rapid than in the past.

§ 98. It is often overlooked that manufactures are subject to a law of diminishing returns. If capital is constantly invested on a single acre of land, a point is finally reached where it will be more profitable to in-

vest further capital elsewhere. Suppose a factory to cover an acre of ground. On each story of the building only a certain number of laborers and machines can be employed. If the investment of capital is increased, additional stories will have to be added to the building. Now there are definite limits to the number of stories that can be used economically in a factory building. The older factories are four or five stories high, but modern factory construction favors one or two story buildings. In such a low building it is found that the largest return can usually be secured from each dollar of invested capital. The expenses for elevators, heavier walls, and greater fire risks, combined with the reason that the factory can be less conveniently arranged and managed, make high buildings less desirable for manufacturing purposes. The law of diminishing returns, therefore, applies to manufactures. When a certain amount of labor and capital has been invested on a single acre of land, a larger return can be secured for future investments by placing them on a new piece of ground. Manufacturing industries, however, permit a much larger investment to be made on each acre of land than can be made in agriculture. It is easy to invest several hundred thousand dollars upon an acre of land devoted to manufacturing industry before the point of diminishing returns is reached. In most kinds of agricultural industry only a fraction of one per cent of this amount can be invested.

The law of diminishing returns in manufactures.

§ 99. In other industries the greatest differences exist

in respect to the amounts of labor and capital that can be invested before the point of diminishing returns is reached. Mining is most decidedly an industry of diminishing returns.[1] As surface deposits are exhausted, shafts must be driven further into the earth, at greater expense and with a rapidly diminishing return. In commercial industries very large investments can be made upon each acre of land. In cities, buildings that cost several million dollars are built upon land that costs hundreds of thousands, or even more than a million, dollars per acre. Such investments frequently amount to $2,000,000 per acre. Yet, even here, the point of diminishing returns is ultimately reached. The tallest office buildings cannot be raised above a certain height except at a rapidly increasing expense. When such buildings are placed close together, very large areas have to be left vacant in order to secure the necessary amount of air and light. At the present time our tall buildings are usually isolated, and secure sufficient air and light because they tower above neighboring structures. If all the office buildings of the business portion of a city should be constructed on this plan, large areas would necessarily be left vacant to serve as air spaces. As the height of the buildings increased, the open area would have to be larger, and would finally more than counter-

The law of diminishing returns in other industries.

[1] Ultimately, of course, a point of exhaustion is reached. In agriculture no such condition need be reached, but land may improve after hundreds of years of careful cultivation. The law of diminishing returns has nothing to do with the exhaustion of the soil.

balance any gain of space secured by constructing additional stories. The necessity of providing prompt elevator service is another force that tends to the same result. The number of elevators must be largely increased as the height of the building increases. The increased room devoted to elevators tends finally to counterbalance the gain of space secured by constructing higher buildings.

Summary.

It appears that a point of diminishing returns is reached ultimately in all productive industries located upon a given area of ground. Sooner or later there comes a time when a larger return can be secured by investing labor and capital upon other tracts. In agriculture the point of diminishing returns is reached with much smaller investments than in manufactures or commerce, but all these industries differ merely in the degree to which they admit of an intensive investment of labor and capital. Again, the law of diminishing returns is true only at a given period of time; and, from year to year, inventions and discoveries increase the amount of labor and capital that can be invested on each acre of land without causing a decrease in the return to each unit of investment.

VI. Large-Scale Production.

Concentration in production.

§ 100. During the present century there has been a remarkable concentration of productive industry. Formerly the amount of capital and labor combined in the average business enterprise was far smaller than it is to-day, while the concen-

tration of production in large establishments is more marked at the present moment than ever before. A few statistics will show how greatly the size of the average business establishment has increased. First may be presented the census statistics of all manufactures of the United States from 1850 to 1890.

	1850.	1860.	1870.	1880.	1890.
Average Product of each Manufacturing Establishment	$8,280	$13,420	$13,420	$21,100	$28,070
Average Capital of each Manufacturing Establishment	$4,330	$7,190	$6,720	$10,960	$19,020
Average Number of Employees in each Manufacturing Establishment	7.7	9.3	8.1	10.6	13.8

This process of concentration is much more marked in the textile industries, as shown by the statistics of the last five census years: —

	1850.	1860.	1870.	1880.	1890.
Number of Establishments	3,025	3,027	4,790	4,018	4,114
Average Product of each Textile Manufactory	$42,560	$70,940	$108,640	$132,570	$175,480
Average Capital of each Textile Manufactory	$37,190	$49,580	$62,140	$102,710	$179,860
Average Number of Employees of each Textile Manufactory	48.5	64.1	57.4	95.6	124.4

Again, the iron and steel industries show even a greater degree of concentration: —

	1870.	1880.	1890.
Number of Establishments	808	792	719
Average Product of each Iron and Steel Manufactory	$256,440	$374,440	$665,760
Average Capital of each Iron and Steel Manufactory	$150,700	$265,030	$575,860
Average Number of Employees of each Iron and Steel Manufactory	95.9	177.7	244.1

§ 101. Modern production tends to become concentrated in large establishments for the reason that it can be carried on most economically in that manner. Large-scale production may secure the following economies : —

Reasons for the growth of production on a large scale.

1. Economy in fixed capital. Modern machinery is expensive, and requires expensive factory buildings. Machine production, therefore, necessitates a very large outlay for fixed capital; and this element of investment tends to increase each year. The statistics just presented show that, in the United States, the average amount of capital invested in a manufacturing establishment was about four and a half times as great in 1890 as it was in 1850, while at the same time the average number of laborers employed is less than twice as large. In the textile industries they show that, while the amount of capital invested in the average establishment has increased to five times the figures for 1850, the average number of laborers employed has increased less than three times. In the iron and steel industries it appears that the average investment of capital is nearly four times as large as it was thirty years ago, while the average number of employees is only two and one half times as large. It is evident, therefore, that the cost of fixed capital is an increasing element in the cost of production. Now the cost of the fixed capital often does not increase proportionately as the product of the factory increases. For this reason such costs are termed the " fixed charges " of a business, since within certain limits they do not vary much, as the amount of

business is larger or smaller. One large building may cost less than two small ones, while it may furnish room for the same amount of machinery. Generally a smaller expenditure for engines and other machinery will enable one large factory to turn out as large a product as two small ones. This is because no machine is needlessly duplicated in the large factory, while in the two smaller factories some of the machinery may be only half utilized for a considerable portion of the time. This often happens when costly machinery is required to perform some short operation, and would remain idle much of each day in a small factory where the product is not large enough to keep the machine constantly employed. Steam railroads, gas and electric-light works, and street railways are the most common illustrations of businesses that require very large outlays of fixed capital. In these industries one company can, manifestly, supply the same territory with very much less unnecessary reduplication of tracks, gas pipes, electric wires, etc., than two companies would require. But the same thing is true, although sometimes to a less extent, of giant factories in which hundreds of thousands or even several millions of dollars are invested in land, buildings, and expensive machinery. In general, it may be said, that the larger the outlay of fixed capital, the greater are the economies that result from the concentration of production in a small number of large establishments. If the annual expenses for interest and replacement of fixed capital are $300,000 in any business, and the product is $1,000,000, then the costs of the fixed capital

will be thirty cents for each dollar of product. Now if the output of the business be increased to $1,500,000 by merely utilizing the machinery to the greatest degree possible, then the costs of the fixed capital will be only twenty cents.

2. Economy may also be effected in the circulating capital. Less coal or lubricating oil may be required in one large factory than in two small ones. A large store need not have on hand at all times twice the stock of finished products that two small stores may require in order to enable them to meet any probable demand of their customers.

3. In experimenting with new methods and inventing new machinery, a large concern has a great advantage over a small one. Invention and experiment are often expensive processes which only a business possessed of large capital can afford. Some large concerns keep scientists and inventors at work endeavoring to improve the processes by which production is carried on.

4. Large-scale production often results in an economy of skill. Labor can be much more efficiently subdivided in a large business undertaking. Out of a great number of employees men of exceptional talents can be selected for the particular lines of work for which they are best fitted. A high specialization of work and a greater efficiency in the application of labor can be secured in this way. Sometimes an absolute saving may be effected in the amount of labor required to do the same work. It is said that a steamer of two hundred or three hundred tons' burden needs one sailor for

every 19.8 tons of cargo carried, while a steamer of eight hundred to one thousand tons requires only one sailor for each 41.5 tons. In many departments of production only a portion of the raw materials can be used for the purpose of producing the main products of each business. A considerable part of the raw material becomes waste unless some means can be found to utilize it. In a large business the amount of waste material is very great, and the incentive for saving it is correspondingly increased. In refining petroleum, material which was formerly wasted is now utilized for the production of lubricating oil, naphtha, and paraffine. So in the business of beef and pork packing, a more complete utilization of every part of the animal is effected in large establishments than could be secured in any other way. Hides, hoofs, horns, bones, blood, bristles, hair, are utilized in the production of leather, glue, fertilizers, etc.

5. Large business establishments can effect savings by carrying on for themselves allied or subsidiary processes. Large oil refiners make their own barrels, tin cans, tanks, pumps, sulphuric acid, etc. Large sugar refiners import their own raw sugar, own their own wharves and warehouses, and make their own barrels and boxes.

§ 102. But we should not overlook certain very important facts which have a tendency to diminish the advantages of large over small-scale production. **Counteracting forces.**

1. In not a few industries a factory of moderate size will secure the maximum efficiency of both buildings and machinery, so that little or no saving of

fixed capital is effected by increasing a business beyond this point. Professor Marshall mentions cotton spinning and calico weaving as examples of this sort of industries.

2. Power is sometimes distributed from factory to factory from a central engine and boiler house. This is often done in the case of steam power, and will be done to a still greater extent when electricity comes into more general use. Such a device places the small producer nearly on a plane of equality with the large so far as the cost of power is concerned.

3. New processes and improved machinery are often given publicity at the present day. Trade papers make a business of disseminating such information. The most improved machinery often can be bought by the small as well as by the large producer.

4. Small establishments of the same sort may often be located in the same vicinity. When this happens, smaller producers may coöperate to secure many of the advantages which large-scale production gives. They may and do combine to own pipe lines, by which crude petroleum is carried from the oil fields to distant refineries; they may coöperate in collecting and utilizing waste products, as the independent oil refiners often do.

5. Finally, it must be admitted that large business establishments often cannot be as carefully superintended in all their branches as a small business which is under the eye of the individual proprietor. There is a great deal of truth in Adam Smith's remark that the hired superintendent who manages other people's capital

is generally less watchful and alert than business partners who manage their own property.

6. In conclusion, it must not be forgotten that large-scale production does not necessarily mean monopoly,—that is, the concentration of the production of the entire supply of a commodity in the hands of one group of producers. This has often been the result in the case of steam and street railways, or of gas and electric-light companies; but in other cases the result has been to replace a multitude of small undertakings by a few large enterprises. It is sometimes claimed that the economies secured by large-scale production are so great that the final result will be the concentration of all production in the hands of giant monopolies. This is a question which will be discussed elsewhere.

§ 103. The combination of small enterprises into large was first noticed in the case of those industries which furnish commodities or services that can be consumed only in immediate connection with the business plants. Gas, electricity, water, and transportation facilities are examples of such goods. Men were not long in finding out that one gas company can furnish gas more cheaply than two companies can afford to do, and that between two cities one railroad can give cheaper and better service than two roads. A tendency to large-scale production was next noticed in manufactures, wherever large plants or large investments of land, buildings, and machinery were required. It is possible to concentrate economically a great deal of capital upon each acre of land

Large production in different branches of industry.

devoted to manufacture. In agriculture, large-scale production has been much less successful. It is claimed, with apparent reason, that the largest crop can be secured from each piece of land only by studying carefully the peculiarities of every acre of soil. Each five-acre tract may be best suited for raising a different crop. Only on a small farm can a proprietor study with sufficient care the varying capability of the soil, and so secure the greatest possible product from each acre. In the United States the tendency in recent years has been to cut large farms up into small ones. Yet there have been, and are still, some instances of large-scale farming carried on successfully with heavy investments of capital.

LITERATURE ON CHAPTER VI.

General References as in the last Chapter.

On the Forms of Business Undertakings: LALOR, Cyclopædia of Political Science, "Corporations;" JOHNSON'S CYCLOPÆDIA, "Partnership," "Joint-Stock Companies;" ROBINSON, Elementary Law; HOLLAND, Jurisprudence, 84–85, 288–297, 257, 258; NICHOLSON, Political Economy, 131–137; HADLEY, Economics, 143–146.

On the Economic Functions of The State: WILSON, The State, 637–640; ELY, Outlines of Economics, 257–306; FARRER, The State in its Relation to Trade. Upon the right of private property, see HOLLAND, Jurisprudence, 175 *et seq.*; ROBINSON, Elementary Law, 22–34; MILL, Political Economy, Bk. II., Chaps. 1 and 2; GIDE, Political Economy, 430–455; HADLEY, Economics, Chap. 2.

On the Law of Diminishing Returns: See, besides general references, COMMONS, The Distribution of Wealth, 116–159.

On Large-scale Production: See, besides general references, HADLEY, Economics, Chap. 6; HOBSON, The Evolution of Modern Capitalism, 1–142.

CHAPTER VII.

THE THEORY OF EXCHANGE.

I. Exchange in General.

§ 104. The process of exchanging products has not always been as important and as widely extended as it is in the life of the most advanced modern nations. Among uncivilized or semi-civilized peoples, who live in the hunting, the pastoral, or the agricultural stages, each family produces all or nearly all the goods which it consumes. Commerce is confined to the exchange of easily transportable articles, which have large value in small bulk, such as precious stones and metals, ivory, spices, fine fabrics, etc. Prior to the present century, when Europe was in the trades and commerce stage, most of the products of industry were consumed in the places where they were produced; and bulky or perishable commodities had not become objects of exchange between distant places. Then began the era of canals, steamships, and steam railroads. This made possible wide-spread exchanges of all products, even the most bulky and perishable. Before the construction of railways in the United States, most communities that were not situated along navigable water courses were self-sustaining economic units; and were

Development of exchange.

bound to neighboring communities by few ties of commercial intercourse.

§ 105. The idea was once common that an exchange of products could profit only one of the two parties effecting it, and that what one gained the other must necessarily lose. The falsity of this view will be made clear by considering the reasons why men desire to exchange the products of their labor. **Advantages of exchange.**

1. Individuals, communities, and even nations differ most widely in tastes and customs. One man or one community may prize most highly a commodity which will possess little value for another person or another community. Under such circumstances, an exchange will place each commodity where it will have the greatest utility. Such an exchange results in an increase of utility.

2. Both individuals and communities have different aptitudes for the various kinds of productive labor. These differences may be either original or acquired, but at any given time they are very marked. Now the exchange of products makes it possible for each person to devote himself to that line of production for which his natural ability or his training best fit him. By doing this, both individuals and communities can increase the productivity of their labor.

3. Again, it happens that persons and communities have different natural environments. Arable lands, pasture lands, forests, mineral wealth, sea fisheries, water powers, or navigable waters are either not available for all communities, or not available in equal degree. By

exchanging cotton cloth for wheat, Massachusetts has been enriched by the fertile prairies of the West; while Kansas and Iowa have had the benefit of the water powers of the New England rivers. To quote from Professor de Laveleye, "The poorest workman consumes the products of two hemispheres. The wool for his clothes comes from Australia; the rice for his pudding from the Indies; the wheat for his bread from Illinois; the petroleum for his lamp from Pennsylvania; his coffee from Java; the cotton for his wife's dress from Egypt or from Alabama; his knife from Sheffield; the silk of his necktie from France."

4. In all these cases it is apparent that both parties to an exchange may and do profit thereby. It is possible, of course, that in many exchanges one person may be cheated; but such is not the case in the majority of the exchanges which are effected each day in the world of commerce. As a matter of fact, we have seen that the exchange of products is a necessary and indispensable part of the modern process of wealth production.

The mechanism of exchange.

§ 106. An elaborate mechanism has gradually been developed for the purpose of facilitating the exchange of products.

1. There has grown up a separate class of middlemen, who devote their entire time to the work of exchange.

2. Means of transporting persons and products have been developed largely for the purpose of aiding the process of exchange. From the caravan to the steam railroad, systems of transportation have in view chiefly

the needs of commerce. Even the post office, the telegraph, and the telephone are used chiefly for this purpose; and they have facilitated in a wonderful manner the commerce of the world.

3. Systems of weights and measures were instituted by private individuals, but their importance in the exchange of products is so great that governments have assumed the work of regulating them in such a manner as to secure greater certainty and uniformity. In time a single system of weights and measures is likely to prevail in all civilized countries.

4. Money and credit are institutions called into being by the needs of trade. They are so important as to require consideration in a separate chapter.

5. Finally, modern commerce requires a great deal of legislation and commercial administration by all the governments of the world. Laws relating to debts, to bankruptcy, to the regulation of railroads, and to the inspection of certain products are instances of this sort. Governments maintain consular services in foreign countries largely for the purpose of promoting commercial interests, while they collect and publish information concerning the commerce of the world.

II. Value.

§ 107. In the course of trade, commodities exchange for each other in certain definite proportions. A bushel of wheat may be exchanged for two bushels of oats, or two tons of pig iron may be required to purchase one ton of steel rails. When

Value and price.

this occurs, wheat is said to be twice as valuable as oats, and the value of steel rails is said to be twice as great as the value of pig iron. It appears, therefore, that the word "value" refers to the proportions in which commodities exchange for one another. For this reason it has often been called "exchange value," and we may define it as the power of a commodity to command other commodities in exchange. The value of all kinds of merchandise is commonly expressed in terms of money. We say that wheat is valued at seventy cents a bushel and oats are valued at thirty-five. Values thus expressed in money are termed prices. Money offers us in this way a very convenient method for comparing the values of all commodities. Suppose that wheat exchanges for seventy cents in money, oats for thirty-five cents, and corn for fifty cents. Then, without making comparisons of wheat and oats, or of oats and corn, we can determine the relative values of those commodities by merely observing what their prices are; that is, by observing in what proportions they exchange for money.

§ 108. Whenever we say that the price of pig iron is, for instance, thirteen dollars a ton, we refer to its price in a certain market, and at a certain time. Between two different markets there may be differences in the prices at which pig iron sells, while from one time to another prices may vary widely. But it is necessary to have clear ideas of just what constitutes a market. A market exists when purchasers and sellers of a single commodity come together in such freedom of intercourse that they establish a single price

Definition of a market.

at which the commodity exchanges. It is evident, therefore, that each commodity has a separate market; and that we may speak of the iron market, the wheat market, etc., since the dealers in iron and wheat do not compete with each other in the establishment of a single price for both commodities. In the second place, it will be evident that some markets will be far more extended than others. Wholesale dealers generally take pains to secure knowledge concerning prices not only in one city, but in a large extent of territory; while they are ready to place their goods in distant markets whenever a difference in prices makes it possible to do so. The result is that wholesale markets are often as wide as an entire country, and sometimes even international. Europe and the United States form almost a single market for such a commodity as wheat, since, for instance, the wholesale markets of the United States respond quite quickly to changes of prices in the English market. Retail dealers, on the contrary, seldom compete for custom in distant markets, and know far less about the movement of prices outside of their immediate neighborhood. The result is that retail markets are limited to a single locality, sometimes to a portion of a single town or city; while retail prices may vary from one town to another, and even from one store to another.

§ 109. The existence of a market in which the same products exchange at a single price generally presupposes the existence of competition. In its widest sense, competition denotes a struggle of conflicting interests, in which each person endeavors

Competition.

to accomplish his own ends, or to secure some advantage to himself, in the face of similar efforts on the part of his rivals. In a market, competition may mean two things. (1) It may mean the endeavors of rival sellers to exchange their goods or services for the money of the buyers; and, on the other hand, the efforts of rival buyers to purchase goods or services at the lowest possible figure. (2) In the second place, it may mean the process of bargaining between buyers and sellers, in which the first set of persons attempts to buy as cheaply as possible, while the second endeavors to secure the highest prices that can be obtained. When there are many competing sellers and many competing buyers, there is little occasion for any bargaining between buyers and sellers. In a market, therefore, the first form of competition is generally sufficient to establish a single price at which commodities sell. Opposed to competition and competitive prices are custom and customary prices. The force of custom may often prevent a seller from charging the full competitive price, or may lead a buyer to pay more than a competitive price. Competition may also be hindered by combinations of either sellers or buyers. When sellers combine and cease to act in rivalry, they may charge more than would be possible if they should compete. On the other hand, combinations of buyers may depress prices.

III. Market Value.

§ 110. We must consider next the causes that determine the value of commodities. In this question econ-

omists are not yet agreed concerning certain points. First, it is necessary to distinguish between market value and normal value. During 1895 the price of a bushel of wheat in New York varied from fifty-six to eighty-three cents, and was seldom exactly the same on any two successive days. These changes of price form the market fluctuations, and the actual value in the market each day is called the market value. Now the average price of wheat during the year was about sixty-seven cents a bushel, and sixty-seven cents may be called the normal value of wheat for the year. Sometimes a longer period than a year is considered in reckoning normal values.

Market value and normal value.

§ 111. The next step toward understanding the problem of value is for us to consider the manner in which market values are determined. These will be found to depend upon demand and supply.

Determination of market value.

§ 112. By demand is meant the amount, or the number of units, of any commodity that consumers are ready to purchase at a given price. In the chapter devoted to the consumption of wealth, it was shown that the amount of any commodity demanded by purchasers in any market will vary according to, (1) the marginal utility of the commodity, (2) the price required in order to purchase it, (3) the wealth of the purchasers. Persons who enter any market as buyers commonly sacrifice money in order to secure commodities. Knowing the extent of their annual incomes, such persons can and do estimate roughly the marginal utility

Demand.

which a unit of money, a dollar, has for them. When they learn that the price of a commodity is a dollar, they can and do compare the marginal utility of the commodity with the marginal utility of a dollar. They will select, or demand, those goods whose marginal utility most greatly exceeds the marginal utility of the money required to purchase them. When the utility of any good offered in the market increases, the surplus of utility over costs is greater, and the demand for that good will tend to increase; and conversely. When the price of the commodity rises, the surplus of utility over costs is smaller, and the demand decreases; and conversely. Finally, when the wealth of the purchaser increases, the marginal utility of money to him will fall, the surplus of utility over costs will rise, and demand will increase; and conversely.

Supply.

§ 113. The supply of commodities offered in the modern market is controlled by producers, or middlemen, who desire to dispose of their entire stocks of goods at the highest prices which it may be possible to secure. We must distinguish carefully between the terms supply and stock. The stock of goods is the absolute amount or number of commodities at the disposition of the sellers. The supply is the amount or number of commodities which the sellers will offer for sale at a definite price. The supply will generally be larger when prices are high, and will usually become smaller as prices fall. The stocks of goods controlled by merchants have been produced almost solely for the purpose of exchanging them for money,

and the merchants have no possible use for any considerable part of such goods as articles of personal consumption.

§ 114. Within any market at any given time prices will be fixed at a point where demand and supply will be equalized. Let us suppose that the sellers in a wheat market control a stock of 1,000,000 bushels of wheat. At a price of eighty cents per bushel, all of this stock might be thrown upon the market, and the supply would be 1,000,000 bushels. At a price of seventy cents, only 800,000 bushels might be offered, since some sellers might prefer to hold their stocks, amounting to 200,000 bushels, for sale at a future time when they believe that better prices could be secured. Again, a price of sixty cents might bring into the market a supply of only 600,000 bushels, since a larger number of sellers might think it worth while to hold their stocks for sale at a future date. On the other hand, let us suppose that the buyers will demand 1,000,000 bushels of wheat at a price of sixty cents, 800,000 bushels at a price of seventy cents, and only 600,000 bushels at a price of eighty cents. Then seventy cents is the price that will make demand and supply equal, and the market price will be fixed at seventy cents for the time. The competition of buyers and sellers will make no other result possible. If the bidding should raise the price to seventy-one cents, the demand would straightway fall off, say to 780,000 bushels. Then some of the sellers who would be willing to sell at seventy cents would find that they

Equalization of demand and supply.

had lost a chance to sell 20,000 bushels. At the same time, the higher price might tempt into the competition some of the sellers who had refused to sell for seventy cents. This would raise the supply of wheat offered for sale, say to 820,000 bushels. It is evident, therefore, that a price of seventy-one cents would decrease the demand and increase the supply. The result would be to stimulate competition among the sellers, none of whom would want to lose their chances of effecting sales, and to cause some of the sellers to lower their prices to seventy cents. For similar reasons, the bidding could not lower the price to sixty-nine cents. At that price the demand would increase to 820,000 bushels, while the supply would fall to 780,000 bushels. Competition among the buyers would at once raise the price to seventy cents.

§ 115. This process of the equalization, through competition, of supply and demand is illustrated perfectly by the actual transactions of the Berlin Stock Exchange. In this exchange the persons who buy and sell stocks do not make their bargains directly with each other. Each day they submit to a committee their bids for the purchase of stocks or their offers of stocks for sale, in all cases specifying the prices and the amounts of the bids or the offerings. The committee examines all the bids, or demands, for securities, and all the offerings, or supplies, of securities. Then it establishes a settling price which will allow the largest number of exchanges to be effected.

Illustration of this principle in the Berlin Stock Exchange.

In such an exchange let us suppose that the bids and offerings of a certain stock are represented by the following table: —

Demand.			Supply.		
Bids.	Number of shares.	Price.	Offers.	Number of Shares.	Price.
1	10 shares	$100	1	10 shares	$92
2	10 "	99	2	10 "	93
3	20 "	98	3	10 "	94
4	20 "	97	4	20 "	95
5	20 "	96	5	30 "	96
6	30 "	95	6	30 "	97
7	30 "	94	7	30 "	98
8	40 "	93	8	30 "	99
9	40 "	92	9	40 "	100
10	50 "	91	10	40 "	101

Then the committee would settle upon $96 per share as the price which would make possible the largest number of transactions. At that price the first five bidders stand ready to buy a total of eighty shares; while the number of shares offered by the sellers is also eighty. A price of $97 would reduce the demand to sixty shares, while a price of $95 would reduce the number of shares offered to fifty. $96 is the price which will equalize demand and supply, and at the same time allow the largest number of purchases to be made.

An assumed case.

§ 116. While the demand for any commodity will tend to vary inversely as the price at which it is offered, various commodities differ very widely in the degree in which the demand for them varies as market prices fluctuate. Certain articles,

Fluctuations of market values.

such as cotton and wheat, supply the more necessary bodily wants. People buy just about so much of these goods each season without stopping to inquire whether prices are a little higher or a little lower. If the prices fall somewhat, consumption cannot be greatly increased; while if prices rise slightly, people will still purchase these necessities, and spend less for other things. The demand for wheat will not decrease very rapidly until "famine prices" are reached, while the consumption of wheat will not increase very much until a very low price is offered. The result is that, when the supply of these commodities varies, the change of price required to produce a corresponding variation of demand is very great. Therefore sharp fluctuations often take place in the prices of necessaries before the demand can be made equal to the changed supply. On the other hand, luxuries and articles of relatively voluntary consumption do not show such great changes in price whenever the supply changes. If the supply of silk increases, a slightly lowered price will stimulate consumption, and lead to an increased demand. Similarly, if the supply decreases, consumption is quickly checked; and the demand decreases before prices rise very high.

Forced sales.

§ 117. Illustrating the equalization of demand and supply, we assumed that the sellers were able to hold back a portion of their stocks of wheat, if they considered that at a future date they would be able to secure a higher price. They were able, therefore, to make the supply of wheat as small or as large as they might find it for their interest to do.

Whenever merchants are selling grain, or lumber, or iron, they can usually hold back a certain portion or all of their stocks; and on any market day can make the supply offered at any given price larger or smaller. If, for instance, there comes a report of a shortage in the wheat crop, dealers will probably conclude that the visible stocks of wheat are likely to decrease, and that the supply offered in the market in the near future will probably be smaller than it is at the present time. The result will be a prospect of higher prices, and this prospect will induce dealers to reserve at least a portion of their stocks for future sales. When this happens, the present supply of wheat will diminish and prices will begin to rise. In many cases, however, merchants are unable to hold back any considerable portion of their stocks. This is most clearly seen in the case of perishable fruits and vegetables. On a Saturday night a merchant may have to dispose of his entire stock at whatever price it will bring, or he will have it spoil on his hands. Under such conditions he is obliged to make a forced sale at any price that will be low enough to induce consumers to take the goods off the market.[1] And this may occur in the case of other than perishable goods. It often happens that the supply of a commodity is increased so greatly that it cannot be disposed of at the former paying prices within a reasonable length of time. At other times a business crisis will throw men out of employment, and make it impossible for them to

[1] Commodities which are likely to become worthless by reason of changes in style or fashion are similar to perishable goods in this respect.

buy the former quantity of goods at the old prices. Here again the supply of some goods becomes excessive relatively to the demand. In all such cases the excessive stock has to be disposed of finally at any price which will induce consumers to take it out of the market.

IV. Normal Value.

§ 118. We are now ready to consider the manner in which the normal value of a commodity is determined.

Forces governing normal value.

Goods are produced by men who desire to sell them at prices that will leave a fair profit after paying the expenses of production. Such producers will endeavor to turn out no larger supply of goods than can be sold at a fair profit in the markets which they may reasonably hope to command. Similarly the merchants who receive the goods from the producers and pass them along to the consumers, will purchase and keep on hand no larger stocks of commodities than they expect to sell at a profit. Both merchants and original producers will normally restrict the supply of commodities whenever prices begin to fall so far that profits begin to be diminished. If prices fall so low that they are no longer sufficient to cover the cost of producing and handling the goods, then production stops. Producers and merchants will not long continue to supply commodities at an actual loss. It appears, therefore, that the cost of producing commodities is a force which, in the long run, tends to limit supply and to affect prices.

§ 119. We must now define with exactness the phrase "cost of production." In a previous chapter we have seen that the costs of production *to society* are, (1) the cost, or sacrifice, of labor, (2) the sacrifice of capital, (3) the possible sacrifice of natural agents in the process of production. We must now distinguish carefully between this social cost of the productive process and the cost to the individual employer. The private employer expends a certain amount of money in purchasing capital and in hiring labor for the work of production. To him the cost of production means simply the amount of money which he has to spend in order to place his product on the market. The *social* cost and the *employer's* cost, or *money* cost, are two very different things. For instance, five hundred years ago the money cost of nearly everything was very much less to the English employer than it is to-day. A laborer could be hired for a few pence a day, beef was only a cent a pound, and most other things were correspondingly cheap. Then it may have cost less money to place some commodity upon the market than it does to-day. But during the interval of five centuries the process of production has been immensely improved and cheapened; so that far less effort is required to produce most commodities. Here is a case, then, where the employer's cost, or the money cost, has risen, while the social cost has greatly decreased.

Analysis of cost of production.

We need to analyze the money cost of production into its most important elements. These are the ex-

penses which the employer incurs for the following purposes: —

Elements of employer's cost.

1. Interest on capital invested.

2. Repairs and replacement of capital consumed in production, including replacement of fuel, materials, etc., and the repair of buildings, machinery, etc.

3. Insurance of capital invested.

4. Wages and salaries of employees, and remuneration for the employer's own exertions.

5. Cost of transportation of materials and product, *e. g.*, freight and express charges.

6. Sometimes the cost of advertising and of effecting sales through traveling salesmen.

7. Taxes paid on the business.

In a more general way, all these various items can be classified by the employer as expenses for capital invested and expenses for labor hired.

§ 120. Let us now consider the manner in which prices are gradually adjusted so that they equal the expenses of production, or the employer's cost. Whenever goods are offered in a market, a market price is at once established. If the price is much more than sufficient to cover the expenses of bringing any product to the market, profits are very large in that line of business. These large profits will soon bring about one or both of two results. *First*, it may stimulate all employers engaged in that line of production to increase their product. *Second*, it may induce capitalists to invest

Adjustment of prices to expenses of production.

new capital in that particular business. In a progressive country there is each year a mass of accumulated profits which are continually seeking favorable opportunities for investment. Sometimes, also, old capital is withdrawn from one line of production, and invested in another that promises greater profits. In these ways the supply of any commodity will generally increase whenever unusual profits are to be secured from producing it. On the other hand, suppose that the market price of a commodity leaves no profit to the producer, or does not even cover the expenses of bringing it to the market. Then producers will soon begin to run their factories at half time, or will close down altogether. Some of them may fail and go out of business. Others may find it possible to devote their capital to some more profitable line of production. We must remember that the expenses of producing a commodity may not be the same in any two factories. A slight fall of prices would merely force out of business those employers who are producing at the greatest expense. A greater fall would affect other employers. In all of these ways the supply will be decreased whenever prices fall so low as to make business unprofitable. Evidently, rising prices call out a larger supply of all commodities that are freely produced, while falling prices ultimately cause a decrease in the supply. The result is that production is constantly regulated according to market prices. The price of every freely produced commodity will tend to be neither more nor less than the expenses of production. The price at which any commodity will just

cover expenses of production is the normal price of that commodity. So long as the investment of labor and capital remains free and unhampered, prices of all commodities will constantly tend to be proportionate to the expenses of producing them. Market prices often go above this normal level, and frequently fall below it. But, in the long run, producers will not continue to supply a commodity for less than its normal price. At the same time, competition among producers will not allow them permanently to secure higher than normal prices.

§ 121. The problem of normal value is complicated by the fact that the expenses of production are seldom exactly the same in any two business establishments devoted to the production of the same commodity. The result is that no two portions of the supply of any commodity may have been produced at exactly the same expense. Now, does normal price correspond to the highest, lowest, or average expense? We will first state the answer, and then explain it. Normal prices vary with the expense of producing the most expensive portions of the necessary or customary supply of a commodity. If in any market the consumers have been accustomed to purchase about 1,000,000 bushels of wheat, and if they demand that quantity at any reasonable price, then they will have to pay enough to make it profitable for producers to raise wheat on the poorest land that has to be cultivated, in order to raise 1,000,000 bushels. If prices should fall below this point, the poorest lands could no longer be cultivated, and the supply of wheat would become less than

Different costs of production.

1,000,000 bushels. Competition between the buyers, who need 1,000,000 bushels, would straightway raise the price sufficiently to make it profitable to cultivate these poorest lands. If more fertile lands should be discovered and taken into cultivation, or if improved methods of farming should be adopted, the supply of wheat would at once increase to more than 1,000,000 bushels. When this happened, prices would fall; and wheat would cease to be produced on the poorest of the lands formerly cultivated. In this way, improved methods of production are constantly throwing less fertile lands out of cultivation, or are forcing the least efficient and least productive factories to close up and go out of business. But at any moment the normal price must be such as to cover the cost of producing that portion of the necessary or customary supply which is produced at the greatest expense. This portion may be called the marginal unit of the supply, and we may speak of marginal producers.

Extent of possible differences of cost of production.

The difference between the lowest and highest cost of production will be greater in some industries than in others. In agriculture, or in mining, the amount of produce secured from any tract of land cannot, at any one time, be increased very much before the point of diminishing returns is reached. When this point is met, it is more profitable to invest additional capital upon other land. The result is that, if the need for agricultural produce or for minerals is so great that the best lands or the richest mines cannot supply all that the consumers

require, then poorer lands and poorer mines must be resorted to. If the needs of the consumers increase very greatly, it is possible for a great many different grades of lands, or of mines, to be used in production; and there may be very great differences between the expenses of production upon the poorest and upon the best land. On the other hand, in manufacturing industries, larger amounts of capital can be invested upon each tract of land before the point of diminishing returns is reached. The result is, that the stock of goods produced upon a single piece of land can be largely increased if the market prices are such as to make it profitable to increase the supply. For this reason the most efficient manufacturing establishments, which produce at the least expense, are constantly increasing their output; and these continually drive the less efficient factories out of business. There is, therefore, less room for a great difference between the expenses of production in the best establishments and in the poorest. If the poorer factory produces at a very much greater expense, its owners will probably find that better equipped and better operated factories will supply the needs of the entire market at prices that make it impossible for inferior establishments to continue in business.

Competition tends to equalize the prices of goods that represent equal expenses of production.

§ 122. The expenses of production have been seen to be the expenses for invested labor and capital. The force that regulates the supply of a commodity that will be produced permanently at any given price is the desire of producers to secure upon each unit of their

investment the same return that the producers of other commodities receive for theirs. Equivalent expenditures of labor and capital will tend constantly to receive equivalent returns, whenever producers are free to compete in the production of goods. It is advantageous to society to have the prices of goods proportionate to the outlays of labor and capital necessary to produce them. If two goods represent the same expenses of production while one of them has a smaller value in the market, it follows that society is securing a product of smaller marginal utility from the labor and capital invested in producing the commodity whose market price is lower. Under such circumstances a product of greater marginal utility to society could be secured by withdrawing from that industry part of the labor and capital invested, and devoting it to some other line of production.

§ 123. Now, the relative amounts of labor and capital that must be expended in the production of different goods depend upon the difficulties that nature opposes to production. Man is constantly discovering improved methods which overcome one difficulty after another, and lessen the expenditure of labor and capital required for the production of each unit of a commodity. In producing a ton of pig iron, greater marginal obstacles are encountered than in the production of a bushel of wheat. More labor and capital, therefore, must be expended in placing a ton of pig iron in the market than are required for producing a bushel of wheat. Conse-

Expenses of production depend upon the natural difficulties of production.

quently the producers of pig iron will not continue to supply any consumer with a ton of that commodity unless they receive a higher price than is paid for a bushel of wheat. We conclude, then, that producers have it in their power to decide how much of any commodity they will put upon the market at any given price. This decision will depend upon the following considerations: —

1. The price that can be secured for the supply that it is contemplated to produce. This price represents the marginal utility to consumers; hence, the demand.

2. The amount of labor and capital required to produce the marginal or most expensive portions of that supply.

§ 124. Market prices at any time depend primarily upon the marginal utility that the given supplies of products have for consumers, that is, upon demand. But, in the long run, the cost of production affects the supplies of commodities; and so affects their marginal utility to consumers. Normal prices depend upon a balancing of marginal utility, the force that governs demand, against the cost of production, the force that governs supply. Two sets of forces, those that govern demand and those that govern supply, continually operate to determine normal value. Value, says Mr. Marshall, "rests, like the keystone of an arch, balanced in equilibrium between the contending pressures of its two opposing sides. The forces of demand press on the one side, those of supply on the other."

Normal value depends upon a balance of two opposing forces.

V. Causes Which Obscure the Theory of Normal Value.

§ 125. There are a great many cases in which the value of commodities does not correspond to the marginal cost of producing them. These remain to be considered. Custom tends to deter producers or consumers from insisting upon full competitive prices. In retail trade the force of custom is very strong. Personal relations often exist between buyers and sellers. These may prevent competition from fixing prices at the normal point. **Custom and prices.**

§ 126. Producers are obliged under modern business conditions to produce commodities for sale, at a distant season, to customers of whom they know very little. It is very easy for such producers to make mistakes, and to supply the market with the wrong kind or the wrong amount of goods. Furthermore, even if each business man had an exact knowledge of the probable future demands of his customers, it would be impossible for him to know just what supplies of goods competing merchants would be likely to bring to market. In this respect, producers are said to work "at cross purposes," and production is said to be "planless." Whenever mistakes are made by those who supply commodities to distant markets, there is a disturbance of the normal relations of demand and supply; and the supply of commodities may be either excessive or deficient. In such cases prices will fluctuate temporarily, and will not correspond to the money cost of production. **Mistakes in production.**

§ 127. The investment of vast amounts of fixed capital in modern industrial enterprises has introduced into business a new cause of disturbance of prices. A large fixed capital usually is a specialized capital; and is an investment that cannot, without great or even total loss, be withdrawn from the particular line of business to which it is expressly adapted. Consequently, whenever prices fall below a figure which will pay all the expenses of production and leave a fair profit, the managers of such large specialized capitals find themselves in a peculiar position. They find it impossible to go out of the business without incurring enormous loss. At the same time it is difficult to curtail production without incurring an almost equal loss, a fact which requires further explanation. Specialized capital in the form of buildings and costly machinery requires constant attention and renewal. Oftentimes machinery depreciates very rapidly when it is allowed to remain idle. The expenses for interest and replacement of fixed capital continue about the same whether an establishment does a large business or remains idle. Moreover, insurance expenses and taxes remain about the same through dull times as through good. Finally, the salaries of the most valuable, and therefore the most highly paid, employees may also be nearly the same, since trained superintendents and highly skilled mechanics are not always discharged even if business is temporarily suspended. The principal "variable expenses," which will depend upon the amount of the product turned out, are the expenses for

The effect of large fixed capitals.

the less valuable kinds of labor and the expenses for materials. The result is that when prices fall below a point at which they yield a fair profit to the producer, the managers of very large establishments will not promptly reduce the product which they turn out. They know that the fixed expenses of their establishments will not be greatly decreased by running for shorter hours or by temporarily suspending production. Each manager will be likely to calculate that if he can sell his product for anything more than enough to cover the cost of materials and of common labor, he will have just so much toward paying the fixed charges. If, on the other hand, he refuses to produce at the lower prices, he will not be earning any part of the fixed expenses. Now, if such producers form a combination, it is easier for them to agree to stop producing any further stock of goods until prices rise. But, without such an agreement, each producer will assume that the others are going to continue production, and that he cannot appreciably diminish the future supply of the commodity by decreasing his own output. The result is that, wherever large plants exist, a fall of prices will not promptly check the output of commodities. Each producer may endeavor to secure something towards paying his fixed expenses, even if he is obliged to sell at a price which little more than covers the expenses for materials and common labor. Prices may remain below the full cost of production for a long time whenever such a condition of affairs exists. Professor Hadley[1] has

[1] See "Railroad Transportation," 72.

called attention to a striking illustration of this fact. Between 1870 and 1873 an exceptionally high price for pig iron attracted a great deal of capital into that industry, and served to increase the annual product from 1,900,000 tons to 2,868,000 tons. Then followed a rapid fall in the price of pig iron from fifty-three dollars to twenty-four dollars, and finally to seventeen dollars. But the immense amount of new capital that had been specialized in the form of iron furnaces could not be as quickly withdrawn. Production remained about as large as before, and for several years manufacturers were glad to produce millions of tons of iron for anything more than enough to pay for materials and common wages. Only after the weaker establishments had been bankrupted and forced out of business, did production become adjusted to the normal demands of the market. It will be noticed that in this instance the influence of the cost of production finally operated to restrict the supply, but that several years were required to produce this result. Prices were restored to a profitable level by a decrease in supply caused by the final bankruptcy of the weaker producers. It is possible that the policy pursued by managers in such a case as this is really a short-sighted one. Longer experience may make it evident that, in the end, it will be more profitable for all concerned to restrict production when prices fall below a normal point, and to incur the expenses entailed by an idle plant. Such a policy would make it possible for prices to recover sooner, and this fact might compensate for any losses incurred in the item of fixed

expenses. Professor Marshall thinks that trade morality is inclined to condemn a man who "spoils a market" by continuing to produce for any price that will barely cover the expenses for materials and common labor.

§ 128. We must consider another case in which it is difficult to trace the relation between value and costs. This occurs in its simplest form when an industry has one chief product upon which efforts are mainly concentrated, but also turns out a by-product. Thus cattle may be raised for the purpose of securing beef; but hides, horns, hoofs, and bones may be secured as by-products. Similarly, wheat is a main product, and straw a by-product; or illuminating gas is a principal product, and coke a by-product. Under such circumstances how will the values of the main products and of the by-products be adjusted? The general principle is that the combined value of the main product and the by-products will approximate the total costs of carrying on the business. Now, producers will endeavor to regulate the production of joint products in such a way that the largest total return can be secured from the sale of all the products. Usually this can be done by producing all the principal product that can be sold at good prices, and then selling the by-products at any prices that will induce consumers to take them out of the market. If the price of the principal product rises, production will be increased, larger stocks of by-products will be secured, and their price will usually have to be lowered in order to dispose of them. It sometimes happens that changed market conditions raise the price of a former by-product

Products and by-products.

so as to make it worth while to regulate production according to the price of that product. In all cases, however, the total prices of all products will conform to the total costs of the business; while the relative prices of the different products will be determined by the relative demand of the market for each commodity, in the quantities furnished by the business.

§ 129. In a large business which has many different branches it is often difficult to determine exactly what are the expenses of each branch. It is especially difficult to determine the exact proportion of the fixed expenses chargeable to each branch, and to each different product. Sometimes this is done in quite an arbitrary manner. Occasionally some one commodity is used as a means of advertising others. It may be sold for less than its entire cost, in the hope that new customers may be attracted, and the sale of other goods may be increased. It is understood that grocers in the United States have often used sugar in this manner.

Difficulty of determining expenses.

§ 130. Whenever the supply of a commodity comes under the control of a single person or group of persons, competition among the sellers is no longer active in determining prices. Such a power to control supply is called a monopoly, and we shall find in a subsequent chapter that monopoly values and prices differ in important respects from competitive values and prices.

Monopoly value.

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CHAPTER VIII.

MONEY.

I. Development of Metallic Money.

§ 131. The earliest exchanges were effected by barter. Each man exchanged goods which had little utility to him for other goods which had more. In this direct exchange of one commodity for another there are serious disadvantages. A horse cannot be bartered for a cow unless each party to the exchange desires to obtain exactly the commodity offered by the other. Very often such a coincidence of desires does not exist. In the second place, many commodities are not divisible into fractional parts. Three hats may be exchanged for a coat, but it is impossible to secure one hat by bartering a third of a coat for it. Again, if one hundred different commodities are continually bartered for each other, they may exchange in any one of 4,950 combinations. Traders must know all of these 4,950 market values if they would avoid being cheated.

Barter.

§ 132. Gradually men devised a method of avoiding these difficulties. They saw that, while some commodities were demanded only upon certain occasions or under certain conditions, other goods were almost invariably in demand, and were acceptable to nearly all persons. Among hunting tribes skins of ani-

The origin of money.

mals were always in demand, since they were the principal product of labor, were durable, and useful for many purposes. Among pastoral peoples cattle and sheep possessed this quality, since they were useful in very many ways, and any person could without trouble add them to his herds. So, among the American Indians, strings of wampum were objects of general desirability, since they served to gratify a universal desire for ornament. When it was found that furs, or cattle, or wampum, or any other commodity was always in demand, a way was opened by which the difficulties of barter could be avoided. If a man possessed corn and desired to exchange it for clothing, he need no longer find another person who desired to exchange precisely the right kind of clothing for the exact amount of corn offered. He would find it advantageous to accept furs, or cattle, or any universally desirable commodity in payment for his corn; and then he could easily find many persons who would be willing to exchange clothing for the furs or cattle. As soon as all persons recognize that certain commodities are usually in demand and usually exchangeable, then those commodities become a general medium of exchange. The exchange of product A for product B becomes broken up into two processes: *first*, the sale of A for some universally acceptable medium of exchange; and *second*, the purchase of B with this medium. In this way the universally acceptable commodity acquires a new and distinct use. Hitherto it was valued simply as an object of personal consumption; now it is demanded also as a means of facilitating exchanges.

Formerly it was a common commodity: now it is a peculiar commodity possessing a special function, — namely, the function of serving as a general medium of exchange. Whenever a commodity acquires this function, it becomes money. Historically, money originated in this way. Among any people some commodities possess greater exchangeability than others, and the most convenient of these finally serve as money. A list of the commodities that have in various times and places served as money can be indefinitely extended. Besides cattle and furs, may be mentioned rice, tea, salt, tobacco, dates, cocoanuts, grains, cowry shells, and many different metals. Traces of such usage still remain in our language. The Latin word *pecunia*, money, is from *pecus*, a herd of cattle or sheep; and from it we have derived our word *pecuniary*. So, too, the English word *fee* has a probable etymological connection with the German word *Vieh*, cattle.

§ 133. Copper, iron, and zinc, as well as gold and silver, have served as money; but gradually the precious metals have displaced the baser. Gold and silver have become distinctively the money metals, while copper has retained a place as small change. This predominance of gold and silver has come about for the following reasons: —

The precious metals as money.

1. Their beauty has made them universally desired for purposes of ornamentation. Probably this is the primary reason why they attained such universal currency as commodities. At the present, the amount of gold used annually in manufactures and the arts is valued at not less than fifty or sixty millions of dollars.

2. They are durable, and can be easily distinguished from baser metals.

3. They are difficult to procure, and therefore have a high value. Small amounts of them can be exchanged for large amounts of most other goods. Hence they are portable, and since early times have been able to seek distant markets. The cost of producing iron, copper, or zinc has so cheapened, on the other hand, that the supply has become very large. Hence they have decreased in value, so that they are too bulky to serve conveniently as money.

4. They are highly divisible. Both gold and silver are divided without loss into small units. With them it is easy to make the right payment for any commodity, whether of greater or of less value.

5. They can be converted easily into coins of uniform quality and weight.

6. They have been extremely uniform in value. The world's stock of gold money and bars is valued at about $4,000,000,000. This is made up of the accumulations of centuries, and the annual product averages only from two to five per cent of this amount. Consequently the annual product has little influence upon the marginal utility of gold. In the case of most other commodities the annual product furnishes the greater part of the available stock, and the marginal utility will regularly vary with every change in the yearly output. People have always been able to receive the precious metals in payment for commodities or services, with confidence that the medium of payment would remain relatively stable in value for years.

Furthermore, the demand for both metals is extremely expansive, so that it increases rapidly as their value falls. This is truer of gold than of silver.

7. They are uniform in value the world over. Possessing high specific value in small bulk, they are transported cheaply to any portion of the globe if a temporary difference of value makes it profitable to do so.

§ 134. The precious metals circulated at first in the form of gold and silver bars, gold dust, and nuggets.

Coins and coinage.

They passed by weight, and those who received them had to provide means for weighing them, and sometimes even for testing their genuineness or purity. So far the development of money was the result exclusively of the acts of private individuals seeking to facilitate the work of exchange. The disadvantages of weighing and testing the money metals were next remedied by coinage. The first step was to stamp a bar, or ring, or wire of gold or silver, in order to certify its weight and fineness. This has been done commonly by governments, but sometimes goldsmiths of recognized standing have stamped pieces of gold and silver, which have been received without question. Such a certification of the weight and fineness of metal saved exchangers from an immense amount of trouble. Improvements in the art of coining have led coiners to stamp both sides of the coin, and to mill the edges. This prevents clipping the coin or otherwise tampering with it, since such attempts deface the coin and can be easily detected. Moreover, the designs impressed upon coins are made

delicate and intricate in order to make counterfeiting difficult. A well-developed coinage makes it possible for money to pass by tale, that is, by count; and exchangers no longer need to resort to weighing in order to avoid being cheated. Professor Jevons has defined coins as "ingots of which the weight and fineness are certified by the integrity of designs impressed upon the surface of the metal."

Free coinage, gratuitous coinage, brassage.

Free coinage of any metal exists whenever any owner of bullion has the right to take it to the mints and have it coined into money. The United States at the present time allows free coinage of gold, but the coinage of silver has been restricted. Gratuitous coinage is a different thing. The work of converting bullion into coins requires a considerable outlay for labor, machinery, etc. In the case of larger coins the expense may be less than one third of one per cent, while in the case of small coins it may amount to three or four per cent. If the government makes no charge for coining money, and bears this expense itself, coinage is gratuitous. England, since 1666, has made no charge for coining money. The United States also, except for the period 1853 to 1875, has made no charge for converting standard bullion into money. When coinage is gratuitous, the amount of bullion coined into an eagle or a sovereign will equal exactly an eagle or a sovereign. If, however, a mint charge is made, bullion will be worth just so much less than coins containing the same weight of pure metal. Most governments oblige persons who bring bullion to the mints to bear

the expense of coining it into money. Such a charge, if it is merely sufficient to cover the expenses of coinage, is called *brassage*.

Seigniorage.

Oftentimes governments retain more metal than is required to cover the costs of coinage. Such a charge is called *seigniorage*. Until recent times many sovereigns repeatedly debased the money of their countries by abstracting a seigniorage of ten, twenty, and sometimes eighty or ninety per cent. When this was done, the weight of the coins was kept up by increasing the amount of alloy. Modern civilized countries usually debase the small coins used for fractional currency, and deduct seigniorage in this way. For instance, since 1853 the fractional silver coins of the United States have been debased. They have been coined exclusively from silver bought by the government, and have contained less than 50, 25, 10, and 5 cents worth of silver, although the government has paid them out at those values. It is important that the larger coins should not be debased, but such a policy is wise in the case of fractional currency. It prevents people from uselessly melting up these coins, which are worth less as bullion than as money.

Origin of coinage systems.

Many facts in the history of coinage systems give evidence concerning the history of money. Both in Athens and in Rome the earliest coins seem to have been stamped with the figures of oxen, a fact which probably points to the earlier use of cattle as money. In the date country of Persia, where dates once served as a medium of exchange, the smallest silver coins had the form of a date. The names

of many coins can be traced back to the time when the precious metals circulated by weight. The Hebrew *shekel* was a weight. The Roman *as* was originally an ingot of copper supposed to weigh an *as*, or pound. The French *livre*, the Spanish *peso* and *peseta*, the English *pound*, the German *mark*, were all originally names of weights which were used to denote coins. Constant debasement by European kings finally reduced these coins far below the original weight. These facts make it clear that money was a commodity which circulated by weight precisely like other commodities.

§ 135. The notion is still common that money originated in some act of government, and is therefore a creation of law. Historically there can be no doubt that money originated solely by acts of individuals, and that governments for a long time had nothing to do with the establishment or regulation of a medium of exchange. At a later date, however, the action of governments began to affect the institution of money. On the one hand, they instituted systems of coinage. On the other, they imposed fines payable in money, and received money in payments to the public treasury. They selected the commodity which had long passed as money between individuals, and made it the means of payment in the case of fines and public dues. This extended the usefulness of money, but did not originate it. The work of coinage was left in the hands of private individuals until comparatively recent times. Gradually the need of uniformity and absolute security forced governments to

Governments and money.

make coinage an exclusively public function, and to prohibit by severe penalties coinage by private individuals.

Legal tender.

After establishing public systems of coinage, governments have taken a further step in developing the institution of money. They have declared that their coins shall be received in payment of private debts. In this way, coins are made a *legal tender* which must be received in discharge of debts, except when persons are allowed in special contracts to agree upon some other commodity as a means of payment. Thus, in the United States, gold coins, the silver dollar, greenbacks (or United States notes), and treasury notes are legal tender; but courts will enforce contracts which call for the payment of gold.

Summary.

§ 136. Money was originally a mere commodity which, on account of its superior desirability and convenience, obtained general currency as a medium of exchange. Hereby it acquired a new use distinct from its other uses as a consumption-good. Men began to demand gold and silver, not merely for use in manufactures and the arts, but also for a medium of exchange. We may therefore speak of a demand for the precious metals for employment as money, and a demand for them for employment in the arts. Upon this combined demand their utility depends. Gold and silver were useful and valuable commodities before they were ever used as money; and they would remain valuable commodities even if people should no longer employ them as a medium of exchange. Yet their value is increased by the money demand for them, and it would

fall if they should cease to be demanded as money. At a late period in the history of money, the influence of governments was felt. Fines and public dues were made payable in the commodity which served as money, and legal-tender laws enabled it to perform more perfectly its work as a medium of exchange.

II. The Value of Metallic Money.

§ 137. Gold and silver as commodities have a certain marginal utility which depends upon their usefulness as consumption-goods. When they are used as money, their marginal utility *for this use* is simply the utility of the quantity of goods which they will buy. When prices are high, a great deal of money is required to purchase commodities; and when prices are low, a large quantity of goods can be bought with a little money. The marginal utility of money will be high, therefore, when general prices are low; and will be low when general prices are high. We must now consider the causes which determine whether the purchasing power of money (that is, its marginal utility) shall be high or low.

The marginal utility of money.

§ 138. Prices are the values of commodities expressed in terms of money. It is possible for commodities as a whole to exchange at one time for very different amounts of money from what they command at another. Between 1850 and 1873 prices rose gradually all over the world, while since 1873 they have gradually fallen. It is not easy to determine whether the general level of prices is

Changes in the general level of prices.

rising or falling, because the prices of all commodities and services do not move in the same direction at any one time. The simplest method of determining variations in general prices is the system of index numbers. The prices of a large number of commodities are determined in some year, and these prices are then called 100 as a basis of comparison. If one hundred commodities should be taken, the index number for the first year would be 10,000, that is, the sum of the prices of all the commodities. Suppose that at the end of the next year it is found that ten commodities have risen, on the average, 10 per cent; that forty commodities have fallen, on the average, 10 per cent; and that fifty commodities remain unchanged in price. Then, by adding the prices of all the commodities reduced to this scale of 100, we should get 9,700 as the index number for the second year. A comparison of the index numbers for the two years shows an average fall in prices amounting to three per cent. In order for this method of index numbers to be satisfactorily used, a large number of commodities must be examined; and the price of each one should be given importance in the final result in proportion to the quantity regularly marketed and consumed. Thus wheat, corn, and pig iron should be given more weight than drugs, spices, and platinum. During the last twenty years all methods of computation show a gradual decline in prices.

§ 139. We may explain variations in general prices in the following manner. We may regard the amount of money in a community as an important factor in

determining the prices that people will be able to pay for commodities. In the words of Mr. Mill, "Money acts upon prices in no other way than by being tendered in exchange for commodities. The demand which influences the prices of commodities consists of the money offered for them." As the amount of money in the hands of consumers increases, the marginal utility of each piece of money will decrease; the surplus of the marginal utility of commodities over the marginal utility of their money cost will increase; and the same number of commodities will be in demand at higher prices, or a larger number of commodities will be demanded at the same prices. On the other hand, we may regard the commodities produced for sale in any community as a stock of goods which producers desire to exchange for money. These commodities, as a rule, have no utility for the producers except as they can be sold. Then we can say that the demand for money will depend upon the amount of goods offered by sellers. Now the ratio at which commodities will exchange for money (that is, the general level of prices) will depend upon the conditions of the demand for money and the supply of money. This can be shown by assuming the following cases:—

Explanation of changes in general prices.

1. Assume that the number of commodities offered for sale remains unchanged, but that the amount of money in the community is increased, as it was in this country after the discovery of the Californian gold mines. Then the increased stock of money will tend to stimulate the demand for commodities; and producers

will, as a rule, be enabled to sell their stocks of goods for higher prices. Conversely, if the mines become exhausted, as occurred during the later years of the Roman Empire, and the stock of money decreases by gradual waste, then the demand for commodities will gradually decline, and a lower level of general prices will be the result. It is apparent, therefore, that, when the stock of money increases, the purchasing power of each piece of money will tend to be less than it formerly was. On the other hand, a decrease in the stock of money tends to increase the purchasing power of each piece. Prices will tend to rise, therefore, when the stock of money increases; and they will tend to fall as it decreases.

2. Next we must study the effect of changes in the amount of commodities produced for sale. We will suppose that the stock of money remains unchanged. Now, in a progressive country improvements in production continually increase the number of commodities that can be turned out with a given expenditure of labor and capital. Furthermore, every increase of population may have a tendency to increase the productive forces of a country, and so to increase the production of commodities. If the number of commodities produced for sale increases, while the amount of money remains the same, producers will have to dispose of a larger stock of goods in markets where the general demand for commodities remains unchanged. Competition between producers will tend to become sharper under such circumstances, and commodities will exchange for less

money than they formerly commanded. This means that general prices will be lower. Conversely, if the production of commodities is decreased so that fewer goods are brought to market, prices will tend to rise.

3. We conclude, therefore, that prices tend to vary directly as the amount of money which consumers take to market to exchange for commodities, and that they will tend to vary inversely as the number of commodities which producers bring to market to exchange for money. But it is important to notice that both the supply of money and the supply of commodities may vary at the same time. Thus an increased supply of money may coincide with an increased production of commodities, or a decreased supply of money may coincide with a decreased supply of commodities. In such cases one change tends to offset the other. On the other hand, a larger supply of money coinciding with a smaller supply of commodities, or a smaller supply of money coinciding with a larger production of commodities, would produce greatly intensified effects.

§ 140. Of the world's stock of gold and silver, only a part is in the form of money. A considerable portion exists as bullion or as manufactured commodities. But gold and silver in the form of bullion or of manufactured goods can be melted up readily and converted into money, if free coinage is allowed, while gold and silver coin with equal ease can be melted into bullion. It follows that the marginal utility of the precious metals as money can never be very different from their marginal utility as bullion. If

Bullion and money.

a change of fashion or of taste increases the marginal utility of bullion, gold or silver coins will be melted up. This will continue until the increase in the supply of bullion will lead to such a decrease in its marginal utility that people no longer care to convert money into bullion. On the other hand, if money commands more commodities than formerly, bullion will be converted into coin, and the supply of money will be increased. Finally, the existence of a large demand for gold and silver in the arts tends to make their value stable. If the value of money increases (that is, if prices fall), the supply of money will tend to increase through the melting up of bullion. Conversely, a fall in the value of money (that is, a rise of prices) will tend to be checked by a greater use of the precious metals in the arts.

The supply of money and the demand for money.

§ 141. General prices depend upon the demand for money and the supply of money. But it is necessary to consider all the elements that determine demand and supply.

1. The number of commodities which producers bring to market is not the only element that influences the demand for money. A commodity may be produced by a farmer or a manufacturer, then sold to a wholesale dealer, then sold by the wholesaler to a retail merchant, then sold by the retailer to the person who is to consume it. The greater part of the goods produced for sale changes hands at least three times in passing from the original producers to the consumers. If one thousand commodities are produced for sale in any community, we may

assume that at least three thousand exchanges will have to be effected before these thousand articles reach the final consumers. Evidently the demand for money will be three times as great as it would be if the goods passed directly from the farmer or manufacturer to the consumer. It appears, then, that the demand for money depends upon two factors, (*a*) the number of commodities produced for sale, and (*b*) the average number of times each commodity changes hands on its way from producer to consumer.

2. The supply of money does not depend solely upon the number of pieces available for the purchase of commodities. Suppose that one thousand commodities are exchanged three times each, so that three thousand exchanges are effected. Now one thousand pieces of money may suffice to effect all these exchanges, if each piece passes from one person to another three times during the time that the thousand commodities are being exchanged. As a matter of fact, the amount of money in any country falls far short of the volume of business to be transacted in any season or year. On July 1, 1895, the amount of money in circulation among the people of the United States was about $1,602,000,000, an average amount of $22.93 for each person in the country. In the course of the year 1895 each piece of money served to effect a considerable number of exchanges, so that the total amount of commodities exchanged for money vastly exceeded the amount of money in the country. Manifestly, $1,600,000,000 circulating from one person to another on the average one

hundred times in the course of a year, will do as much money work as $16,000,000,000 each piece of which changes hands only ten times during the same period. Evidently the supply of money depends upon the two factors, (*a*) the number of pieces of money, (*b*) the average rapidity with which they circulate. It will be well to explain clearly what is implied by the phrase "rapidity of circulation" when applied to money. If the members of a community are prosperous, they will be able to purchase commodities freely. The demand for both consumers' and producers' goods will be active. Whatever incomes consumers receive will be quickly expended for consumers' goods; or will be invested, and so will be exchanged for producers' goods. Merchants will find their stocks of goods in active demand, and commodities will pass quickly from producer to consumer. Under such circumstances, a given stock of money will circulate much more rapidly than when trade is dull and people are less prosperous. There are, of course, limits beyond which the rapidity with which money circulates cannot be increased; and, furthermore, it will be greater in some communities than in others. The rapidity of circulation will regularly be great in proportion to the activity, enterprise, and prosperity of each community.

3. While this statement of the various elements that determine the demand for money and the supply of money complicates the theory of general prices, the difficulty is not so great as it might seem. In the United States at any given time, the rapidity with which money

circulates is fixed within quite narrow limits, and it cannot change to any great extent. So, also, the average number of times that commodities pass from one person to another before they reach the final consumer is something that is fixed quite definitely at any given time by the habits and customs of our people. If the number of pieces of money in the United States increases, it is safe to assume that rapidity of circulation will not vary greatly, and that the supply of money will be increased. Similarly, if the production of commodities increases, it is safe to assume that there will be no considerable change in the average number of times that each commodity changes hands; so that an increase of commodities will be practically equivalent to an increase of the demand for money.

§ 142. If we assume the world's stock of the precious metals to be fixed, then their values will depend simply upon the supplies of gold and silver available for money and for use in the arts, and the demand for both metals. The problem becomes, under such circumstances, exactly similar to the problem of market prices. But, as a matter of fact, gold and silver are produced, like any other commodities, by men who desire to make a profit out of the operation of their mines. If the value of money is high, the profits of mining gold and silver will be large, and the output will begin to increase. Conversely, a low value of money will decrease profits and reduce the production of the precious metals. Gradually the supply of money will be increased or de-

The cost of production of the precious metals finally influences their value.

creased as the output from the mines slowly changes. Several years may be required before a change in the world's output of gold or silver will appreciably affect the value of the enormous stock of the precious metals. But, in the long run, changes in the production of gold and silver will make their value approximate the marginal expenses of producing them.

Let us consider in greater detail the manner in which the cost of producing the money metals affects their value. Suppose that prices are low. Then the money cost of doing all business will tend to decrease, and the expenses of mining gold and silver will become smaller. At the same time, the low level of general prices means that the purchasing power of the money metals is increased. The lower cost of production will make mining very profitable, and will increase the annual output. Thus a fall of prices tends to cause an increase of the supply of the money metals. Ultimately the increased supply will lower the value of money, and so restore a higher level of prices. Again, suppose that an increasing supply of gold or silver, or any other cause, produces a decline in the value of money and a rise of prices. Then the higher level of prices will increase the expense of doing business, and will therefore increase the money cost of mining. The lower value of money will gradually cause a decrease in the production of gold and silver. This takes place in the following way. Some mines are much richer than others, and from them gold can be produced at a smaller expense. When prices rise and the expenses of

Detailed explanations.

mining increase, the poorer mines can no longer be operated at a profit and will cease to be worked. The general level of prices, therefore, will help to determine what mines can be operated profitably, and what mines cannot be worked. Rising prices will gradually shut off the supplies of metals secured from the poorer mines.

The adjustment of the money metals to the expenses of producing them is effected slowly by a gradual increase or decrease of the supply. For long periods of years there may be no correspondence. But, in the long run, the cost of producing gold and silver from the mines that form the sources of supply will exert an influence upon their value.

The value of money is adjusted imperfectly to the cost of production.

§ 143. In applying this theory it should not be forgotten that hitherto the production of the precious metals has been conducted in a haphazard manner. By mere accident rich mines have been discovered in South America, California, Australia, and South Africa; and the world's stock of gold and silver has been increased suddenly without any special reference to the existing level of general prices. Yet, even in these cases, two things have ever been true: *First*, the search for the precious metals is always most active when their purchasing power is high. *Second*, whenever sudden discoveries of the money metals have increased the stock of money and raised prices, the poorer mines have had to be abandoned; and in this manner production has been checked. At the present time gold

Actual conditions of the production of gold and silver.

and silver are mined in a far more systematic manner than ever before, and the principles laid down will operate more promptly. The rise in the purchasing power of gold during the last twenty years has stimulated gold mining in a wonderful manner. Formerly gold was produced by crude methods, mainly from rich placer deposits or from very rich ores. The placer deposits are limited, and have been discovered and worked in a very haphazard manner. But within recent years the methods of mining gold-bearing ores have been vastly improved. Ores which formerly could not be worked at a profit are now handled by new methods in such a way as to yield very large returns. In the future the business of gold mining will be conducted in anything but a haphazard manner. Silver has always been produced by a more systematic process of separating it from the ores in which it usually occurs. Its production has not depended upon the chance discovery of rich surface deposits, for it seldom occurs in its native state. In recent times the production of gold and silver has been quite regular from year to year, increasing or decreasing in a gradual manner. For the future, we have a right to anticipate a systematic production of both metals in such quantities as shall be commercially profitable.

History of the production of gold and silver.

§ 144. At the opening of the Christian Era, large amounts of gold and silver, accumulated by the conquered nations of the lands adjoining the Mediterranean Sea, had been seized by the Romans and thrown into circulation throughout their empire. A rise of prices hindered

further mining of the precious metals, while wasteful methods of operation caused a rapid exhaustion of the richest mines. Gradually the production of the precious metals ceased, the existing stocks were dissipated, and a fall of prices set in throughout the Roman world. From the fourth century to the sixteenth there was a positive money famine. For several centuries practically no additions were made to the world's stock of gold and silver, and the art of mining seemed to be lost. Toward the close of the Middle Ages, mining was commenced in Austria, Hungary, and Germany; but prices continued at a very low level until some years after the discovery of America. After 1545 the Peruvian mines poured a flood of silver into Europe, and finally prices began to rise at a rapid rate. After 1700 the Brazilian gold mines turned out large quantities of gold, while later in the same century the Mexican mines began to yield large amounts of silver. The combined effects of these discoveries of gold and silver were to cause a rise of prices of three or four hundred per cent between the years 1600 and 1800. In 1848 came the discovery of gold in California, and three years later the Australian production became very large. About 1800 the average annual production of gold was 571,000 ounces. In 1850 it suddenly increased to four times that amount. By 1860 it had increased to nearly 6,500,000 ounces, and prices had begun to rise again all over the world. After 1860 the gold production gradually declined, but it is probable that prices rose at least twenty per cent between 1850 and 1870. During the decade, 1860 to 1870, the production

of silver began to increase, particularly in the United States, where the mines of Nevada were being opened. Prior to 1860 the world's annual production had never equaled 30,000,000 ounces, but between 1871 and 1875 it averaged 63,000,000 ounces. Since 1875 the silver output has constantly increased, amounting to 169,000,000 ounces in 1895. This is more than five times the average annual production at any period previous to 1860. During the last five years the world's product of gold has largely increased. In 1890 about 5,749,000 ounces were produced. For the year 1895 the production was about 9,688,000 ounces.

§ 145. It will help us to avoid misunderstanding if we note that this explanation of the relation of money to prices concerns *general prices,* and explains only the well-known fact that money will buy more commodities at some times than at others. Independently of changes in general prices, the prices of wheat, or corn, or iron may rise and fall according to the particular conditions of the demand for such commodities and the supply of them. When general prices are rising, it is possible for the prices of a minority of goods to fall, on account of special causes affecting their supply and demand; while, in a period of falling prices, some few commodities may remain stationary in price, or may even rise.

General prices and prices of individual commodities.

§ 146. Historically the earliest function of money was to serve as a *medium of exchange.* For this purpose it originated. But money has come to perform other functions. It serves, in the second

The functions of money.

place, as *a value denominator*, a common denominator in which the exchange values of other commodities are expressed. Not only commodities, but also wages, salaries, rents, and all kinds of public and private payments are expressed in terms of money. This function is distinguishable from the first function of money. It has happened that one kind of money has served as a medium of exchange, while another has served as a value denominator. In the American colonies the values of all commodities and services were expressed in terms of English money (that is, in pounds, shillings, and pence), while the actual circulating medium was composed almost entirely of Spanish, Portuguese, or Dutch coins. Money which serves as a value denominator, but not as a medium of exchange, is called money of account. Closely connected with this second function of money is a third, the function of serving as *a standard for deferred payments*. In renting lands, or in agreeing to pay interest and principal of mortgages or bonds for a long period of time, persons are constantly entering into contracts to pay debts at future dates. These long-term contracts may extend over a period of five, twenty, or even one hundred years. In such cases money usually serves as a standard for deferred payments. But other commodities have been used. Colleges of the English universities, Oxford and Cambridge, have for centuries leased their lands for corn rents. These corn rents have varied far less than money rents would have varied during the centuries that they have been in force. Revolutionary changes in the value of money make it an imperfect standard for long-

deferred payments. Finally, money performs a fourth function, that of serving as *a legal tender for all debts.* Historically, this has been a function which governments have conferred upon money at a late stage in its development. The precious metals served as a medium of exchange for centuries before legal-tender laws were even thought of, while gold would serve as money at the present day even if all legal-tender laws should be repealed. Silver also would circulate readily in some countries without being made a legal tender, but in Europe and the United States its use would be considerably restricted. The wholesale trade of civilized countries requires the use of gold. The superior convenience of gold for large payments has caused the commercial world to show a marked preference for that metal. Until 1861 many foreign gold and silver coins, even when our government refused to make them legal tender, circulated in the United States. Certain well known coins, such as the English sovereign, have obtained currency in many parts of the world where they have not been a legal tender.

III. Debased Money. Gresham's Law.

§ 147. Governments have often declared various gold and silver coins to be full legal tender in payment of debts. When this has been done, it has frequently happened that the legal-tender power of two different coins has been made the same, while one coin has contained metal of considerably

Debased money.

greater value in the bullion market than the other has possessed. For instance, in 1895 the average market value of the fine silver in one of our silver dollars was about one twentieth of the market value of the gold bullion contained in a ten-dollar gold-piece, or eagle. In other words, ten silver dollars were given by law the same power as the eagle possessed in the matter of paying debts; while the silver bullion contained in them had about one half the market value of the gold bullion contained in the eagle. Whenever a coin is given a legal-tender power greater than the market value of the gold or silver bullion which it contains, it becomes a *debased coin*. We have now to consider the results of giving equal legal-tender power to coins that have different bullion values.

The quantity of money which a nation needs.

§ 148. At any given time a community or a nation will need a certain number of pieces of money in order to carry on its exchanges at the existing level of prices. Suppose that commodities to the value of $1,000,000 are produced annually, and that they change hands three times in passing from the producers to the consumers. Then $3,000,000 of exchanges will need to be effected each year. Suppose that the community possesses a stock of money amounting to $60,000, and that each dollar circulates with a rapidity sufficient to cause it to pass from one person to another fifty times during each year. Then the stock of money will be just sufficient, during the course of the year, to effect all the $3,000,000 of exchanges; and the general level of prices for the year

will be one dollar. Now, if the production of commodities remains unchanged, the community will need $60,000 of money to effect its exchanges at the existing level of prices. If the production of commodities decreases, less money will be needed to maintain the existing level of prices; while, if production increases, more money will be needed, assuming in both cases that all the conditions of exchange remain the same.

Circulation of debased money.

§ 149. Now suppose that the nation's stock of money has consisted hitherto of gold dollars, each of which has contained 23.22 grains of fine gold.[1] Suppose that the government decides to allow any person to bring 371.25 grains of fine silver[2] to the mints, and to have this quantity of silver converted into a coin which is called a dollar. Suppose that this silver dollar is allowed by law to have the same power to pay debts which the gold dollar possesses, while the market value of the bullion contained in each silver coin is only one half as great as the value of the bullion contained in each gold coin.[3] We should then have an example of the influence of bad or debased money in driving out good money. With other things

[1] This is the weight of the pure contents of the gold dollar, which was coined in the United States from 1849 to 1890. It is one tenth of the weight of the present eagle.

[2] This is the weight of the pure contents of our silver dollar.

[3] This corresponds closely to the average price of silver bullion for 1895. The readers will remember that, at any moment, the market value of gold or silver bullion will depend upon the supply of either metal and the demand for each for money and for use in the arts. In the long run, however, the market value of gold and silver bullion will depend upon the marginal expenses of production.

it often happens that superior commodities drive inferior out of the market, but with legal-tender money the case is different. If the law allows the debtor to pay a debt of ten dollars with ten silver dollars whose bullion value is only one half the bullion value of a ten-dollar gold-piece, many debtors will make payment with the cheaper money. As a rule, the dearer money will go out of circulation as fast as cheaper money is allowed to take its place. Even when coins are not actually declared legal tender, the force of custom, or the ignorance of many persons concerning the actual bullion value of the coins, may serve to give currency to the inferior money. It will then tend to displace better money precisely as if it had been legal tender. Economists call this principle "Gresham's Law," after Sir Thomas Gresham, who long ago formulated the statement that bad money tends to drive out good, but good money cannot drive out bad.

Manner in which Gresham's law operates.

The operation of Gresham's law does not depend necessarily upon the action of the mass of the people in picking over various coins in order to select the cheapest for the purpose of paying their debts. This is done by money dealers. Goldsmiths select the heaviest and most valuable coins for the purpose of melting them up into bullion. Bankers and gold brokers constantly pick over gold money to secure the heaviest coins for shipments to foreign countries. When American gold coins are sent to England, they pass as so much gold bullion. Bankers who ship bullion naturally select the heaviest coins for

paying foreign debts, and turn back into circulation those that have been worn lighter by longer use. So with the silver dollars in the case which we have assumed. They will be used for paying domestic debts, while the gold coins, on account of their superior bullion value, will be used in paying foreign debts.

§ 150. But there are limits to the power of inferior money to drive out superior. If there is a large amount of silver bullion available for coinage purposes, and the law allows any amount to be brought to the mints, a large number of silver dollars will be placed in circulation. In the bullion market 371.25 grains of silver are worth only one half of 23.22 grains of gold; but the law gives to the 371.25-grain silver dollar the same power in paying debts that the 23.22-grain gold dollar possesses. Under such circumstances the gold dollars will be melted up for use in the arts, or will be shipped to foreign countries to pay foreign debts. If the silver money comes into circulation gradually, the disappearance of gold will be gradual. But if every one knows that an unlimited amount of silver is sure to be put into circulation in the near future, a general scramble for gold may ensue. Many people will hasten to get as many gold dollars as possible while the supply of gold in circulation holds out, and the disappearance of gold will be rapid. The power of the inferior money to displace the superior will be limited by the fact that the country needs $60,000 of money to effect its exchanges at the existing level of prices. If gold dollars disappear

Limitations to the operation of Gresham's law.

faster than silver dollars can be coined and placed in circulation, then the stock of money will become inadequate and the value of money will rise. This rise in the purchasing power of money will attract some gold dollars back into circulation, and they will remain in use until new silver dollars are ready to take their places. Assuming that the nation's demand for money remains unchanged, and that the rapidity with which each dollar circulates is unaltered, then the gold coins could not all disappear until $60,000 of silver coins should be placed in circulation. If the government should limit the coinage of silver to $30,000, then $30,000 of gold would disappear from circulation, and the nation's stock of money would consist of equal amounts of gold and silver. On the other hand, if the nation is prosperous and progressive, its demand for money will increase from year to year as its volume of business increases. Suppose it to need each year an increase of $2,000 in its money supply in order to transact its increased business at its old level of prices. Then two thousand silver dollars could be placed in circulation annually without displacing any gold money. Finally, if any cause should decrease the amount of business transacted in any year, and should decrease the nation's demand for money, a certain amount of gold would disappear from circulation.

Less demand for money.

It is important not to overlook one possible result of placing debased money in circulation. The mere threat of a debasement of the currency may check business activity and diminish the

amount of business transacted. Men will not make contracts for the future, and will not be inclined to invest capital freely, when they consider it probable that money will be debased. When debasement actually occurs, a business panic is likely to ensue. This greatly contracts the volume of business transacted, and diminishes the demand for money. Such a lessening of the demand for a medium of exchange will enable the cheap dollars to supply the entire demand for money more quickly than would be possible otherwise.

§ 151. We must consider now the result of placing the inferior silver coins in circulation side by side with the superior gold coins. If the nation's demand for money remains unchanged at $60,000, the result of placing 60,000 of the silver dollars in circulation will be merely to drive the 60,000 gold dollars out of circulation. If the coinage of silver dollars should be stopped at that point, so that the supply of money would remain at $60,000, there would be no change in the general level of prices. The nation's stock of money and its demand for money would both be unchanged, and general prices could not be altered. If, therefore, the supply of the cheaper silver dollars should be absolutely limited to $60,000, the silver money would perform all the business of the nation as well as the gold; and the purchasing power of 371.25 grains of fine silver in a dollar would be twice as great as the purchasing power of 371.25 grains of silver in the form of bullion. But this would hold true, be it remembered, *solely* upon the condition that the coinage

Effects of debasement.

of silver dollars should be absolutely limited to $60,000. As a matter of fact, there is very little likelihood that the nation could limit its coinage in this manner. Three causes would in all probability lead to an increase of the silver coinage: —

(*a*) The government could make a large profit by buying silver bullion, converting it into silver dollars, and using these dollars to pay debts. Whenever the sovereigns of Europe debased their coinages, this motive almost always led them to continue to put debased money into circulation long after the demand had been satisfied.

(*b*) Owners of silver mines might continually urge the government to open its mints to the free coinage of silver dollars, since these mine-owners could, *at the start*, carry 371.25 grains of silver bullion to the mints, and have it coined into dollars which would exchange for as many commodities as 742.50 grains of silver bullion would command in the market. In the United States the owners of silver mines have incessantly urged Congress to allow free coinage of the 371.25-grain silver dollar, and have expended large sums of money in furthering political agitation for the free coinage of silver.

(*c*) In all countries there are many debtors who would welcome the opportunity to pay off their debts in money which is worth less than that in which the debts were contracted. If the amount of money in the country should be increased much beyond $60,000, then its purchasing power would surely begin to decline. As money becomes less and less valuable as compared

with commodities, the burden of all debts is lessened. It is for the apparent interest of debtors, therefore, to have the amount of money as large as possible. Whenever coins are given a legal-tender power greater than their bullion value, then it is easy to increase or inflate the currency with cheap money. Human nature is likely to succumb to such a temptation as cheap money holds out to debtors. In the United States we have been cursed by an agitation in favor of cheap money for the last two centuries. Any one of these three forces, still more two of them combined, would in many cases be sufficient to cause the passage of laws opening mints to the free coinage of the cheaper money.

Ultimate results of debasement.

Let us now trace the effect of increasing the coinage of silver dollars beyond 60,000, the limit set by the real demands of trade at the old level of prices. It is clear that, if the number of silver dollars should increase to 70,000 within the space of a year, the purchasing power of each coin would tend to decline; since it is not likely that the demand of any country for money could increase correspondingly within a period of twelve months. If the number of dollars should increase to 80,000, the fall in the value of money would be more rapid, and the rise of prices would be very marked. Now what limit, if any, will there be to the increase of such a silver coinage? Manifestly there will be an inducement for persons to carry silver to the mints to be coined just as long as the money value (that is, the purchasing power) of the silver dollar remains greater than the purchasing

power of 371.25 grains of pure silver. When prices rise so that 371.25 grains of fine silver will purchase no more commodities when coined into a dollar than it will purchase when in the form of silver bullion, the coinage of silver will cease. In other words, when the purchasing power of a silver dollar falls to the level of the purchasing power of 371.25 grains of fine silver bullion, then there will be no inducement for any one to bring any more silver to the mints. This amounts merely to saying that the money value and the bullion value of silver will always tend to be the same, when people are left free to convert bullion into coin and coin into bullion.

The value of silver bullion.

A final point now demands attention. Is it not possible that the increased demand for silver as money, since it leads to the conversion of bullion into coin, may diminish the supply of silver bullion and raise its marginal utility? Manifestly such a thing is conceivable. If the silver mines should become exhausted, or the production of silver should be stopped, then the conversion of bullion into coin would very rapidly raise the marginal utility of silver bullion. If the marginal utility of the limited stock of bullion should increase rapidly, then the fall in the purchasing power of the silver dollar could not be so great. The fall in the purchasing power of the dollar would be met sooner or later by the rise in the value of the silver bullion. Whenever this should happen, equality would be restored between the money value and the bullion value of silver. The coinage of silver would then cease,

and prices would rise no longer. But, on the other hand, suppose that the production of silver cannot be limited. Then the supply of silver bullion will continually increase. If production remain large, the marginal utility of silver bullion would not be increased by reason of the demand for silver as money. All would depend upon whether the new demand for silver as money should prove to be greater or less than the additional supply of silver which could be put out of the mines. This additional supply would probably be produced at a greater marginal expense from ores which could not be worked profitably when the value of 371.25 grains of bullion was only fifty cents. If the supply could be increased very largely with only a slight increase of the marginal expense, then the coinage of silver would rapidly become excessive, and the purchasing power of each coin would fall greatly. If the marginal expense of producing the larger supply increased very rapidly, the supply of silver dollars, hence the depreciation of each coin, could not be so great. In any case, the supply of silver dollars would increase until the decline in the purchasing power of each coin should make the value of a dollar equal the marginal expenses of production.

IV. Inflation and Contraction.

Inflation.

§ 152. The use of debased coin opens the door for a sudden increase, or inflation, of the supply of money. When the weight or fineness of existing coins is arbitrarily reduced, it is easy to

increase their number. When the money consists of gold alone, it is easy to inflate a currency by giving legal-tender power to silver coins that have a smaller bullion value than the gold coins. Similarly, if silver is the standard money, inflation may be produced by circulating legal-tender gold coins which have a smaller bullion value than the silver coins. This was attempted in the colony of Massachusetts in the last century. But if, on the other hand, only coins of an equal bullion value are allowed to serve as legal tender, inflation cannot take place unless sudden discoveries of gold and silver, or improvements in the art of mining, increase the supply of money faster than the needs of trade. Even when this happens, a rise of prices will increase the expenses of mining the precious metals, and will have a tendency ultimately to check their production. Evidently the difficulty or the cost of producing the precious metals generally proves a bar to an increase of gold or silver money beyond the needs of trade. It is clear that any sudden rise of prices caused by such a rapid inflation will work injustice in the case of all long-term contracts. If prices suddenly rise, debtors are enabled to pay old debts in money which will command fewer commodities than that in which the debts were contracted. Such a change in the purchasing power of money is unjust to the creditors.

Contraction.

§ 153. On the other hand, it is possible for the world's stock of metallic money gradually to decrease. Each year a certain amount of coin and bullion is lost by accident or by abrasion

while in use. Now, if the gold and silver mines do not furnish enough to make good this loss, the supply of bullion and of money will gradually decrease. Besides this, it is possible that the total amount of money needed by the civilized world increases in prosperous years. Now, if the mines do not yield enough gold and silver to provide for this increased demand for money, as well as to make good the yearly loss of the precious metals, then the supply of money will undergo a relative decrease. Contraction of the money supply may, therefore, take place either by an absolute decrease of the stocks of gold and silver, or by a failure of the stocks to increase as fast as the demand for money and bullion increases. Now, a contraction of the money supply tends to lower all prices, and to oblige debtors to pay long-standing debts in money which purchases more commodities than were commanded by the money in which the debts were originally contracted. This is exactly as unjust as it is to cheapen money, and to enable debtors to pay debts with money of inferior purchasing power.

§ 154. We must conclude, therefore, that a sudden increase of prices is unjust to creditors, while a sudden fall of prices is unjust to the debtors. If changes take place slowly, less harm is done; but it is hard to see how one party or the other can fail to suffer. Recognizing this fact, some persons have proposed to maintain without change a fixed level of prices. They have desired to accomplish this by having governments take steps to increase or decrease the amount of money in circulation whenever

Evils of changes in the volume of currency.

general prices begin to fall or to rise. Another plan is to allow contracts for future payments to be made in units of a tabular standard of value. This tabular standard would be formed by adding together the prices of definite units of as many articles of common consumption as can be secured for the purpose. Whenever the total prices of these commodities should rise, the money value of long-term contracts would be increased accordingly; and when the tabular unit should fall, less money would be required to discharge such contracts. Both of these plans present a number of practical difficulties which make them impossible of adoption in the near future. There is at present no practicable method of avoiding the evil effects of inflation or contraction. It is possible, however, to insist that the supply of money shall not be increased or decreased in an arbitrary or artificial manner.

Certain forces tend to diminish the injustice done to creditors or to debtors by changes in the value of money. It has been shown that an appreciation of money is partially offset by a decline in the rate of interest in those cases where the appreciation is gradual and regular enough to be foreseen. On the other hand, depreciation of money leads to higher rates of interest in cases where it can be foreseen. Yet, when all allowance is made for the influence of these changes in the rate of interest, there remains "a net loss alternating between debtors and creditors," according to changes in general prices.[1]

Changes in rates of interest may lessen such injustice.

[1] See FISHER, Appreciation and Interest, 80.

It is sometimes said that it makes no difference whether the amount of money in a country is large or small. If the supply is large, prices are high, and it takes more money to exchange the same commodities; while if the supply is small, prices are low, and the same commodities are transferred by means of a smaller amount of money. There is some truth in this claim, provided that it is remembered that changes in the amount of money are harmful. Also, the statement should be qualified by noticing that a country may have so little money that people may be driven to barter, and industries may be greatly injured. In concluding this subject, it will be well to consider certain other effects of contraction and expansion.

Other considerations.

1. Contraction tends to depress productive industry. Most debts are owed for capital borrowed for use in productive enterprises. The managers of business undertakings form a most important part of the debtor classes. Now, suppose that a producer borrows $10,000 in order to help build a factory or to buy a farm, and suppose next that the value of money begins to increase on account of a contraction of the supply. Then prices will fall as fast as the value of money rises, and the borrower will have to produce a much larger amount of cloth or farm produce than would be necessary otherwise in order to pay the debt of $10,000. Under such circumstances, which are as a matter of fact very common, falling prices caused by currency contraction have been well called a millstone around the neck of productive industry.

2. On the other hand, it has been thought that a

gradual rise of prices tends not only to lighten the burden of debts owed by producers, but also to encourage all productive industry. Higher prices mean more prosperous times for all producers. In this claim one fact is overlooked. Rising prices are sure to stimulate speculation. If the rise is long continued, multitudes of new enterprises will be established. Some of these may be wisely planned and managed, others are sure to be established unwisely. Many of them will be founded by means of borrowed capital, which is easier to secure in times of prosperity. These causes lead to the establishment of too many enterprises in some lines of business. Over-production of such commodities will ensue, and the prices of these particular commodities will fall below a paying point. Then comes failure and widespread business disaster, which may not be confined to the particular industries where over-production occurred. Such results are likely to come about even when prices are not raised by means of an expanding currency. Inflation simply intensifies forces which are only too likely to come into operation without such a stimulus.

V. Government Paper Money.

§ 155. Government paper money consists usually of pieces of paper upon which a government prints its promises to pay. Usually no time of payment is specified, and the payment or ultimate redemption of such notes depends solely upon the desire and ability of the government to keep its promises. In a few cases such paper has been redeemed

Nature of government paper money.

at its face value; but much oftener it has been repudiated, or has been redeemed only in part. In some cases government paper has not borne upon its face the promise of the government to pay, and has consisted simply of pieces of paper that the government has declared to be legal tender in the payment of all debts.

§ 156. Manifestly it is very easy for a government to pay a debt by issuing paper promises to pay, and such a course has often been resorted to. In the United States the colony of Massachusetts made an issue of "bills of credit," in the year 1690, for the purpose of paying the expenses of a disastrous military expedition. Some years later other colonies followed her lead, and during the eighteenth century issues of bills of credit were often resorted to by most of the colonies. In the Revolutionary War, and again in the Civil War, similar issues were made by the United States. It is evident that the people of this country have had sufficient experience with such currency to enable them to learn from their own history how government paper actually works.

History of government issues in the United States.

§ 157. The advocates of government paper money have advanced the following claims in its favor: —

The arguments in favor of government paper money.

1. Government paper is cheaper than gold or silver. By its use a nation saves the expense of procuring and maintaining a stock of the precious metals. This is certainly true so far as it goes. Yet in foreign trade the precious metals would have to be used, as one nation does not accept the legal-tender paper issued by another.

2. It is said that government paper may be used as a medium of exchange with perfect safety and convenience, so long as means are taken to prevent it from being issued in excess of the demands of trade. One scheme to secure such a limitation is to give the holders of such notes the right to convert them into government bonds that bear interest. It is said that so long as the notes are needed in business they will remain in circulation, while so soon as the amount of government paper becomes too great and prices begin to rise, the noteholders will begin to find it advantageous to exchange the notes for government bonds. In this way the issue of paper could never be excessive. In answer to this claim we must admit that such paper money could keep its value and need not depreciate *if* the bars to its overissue could be maintained. But this is precisely the trouble. Various causes, which will be explained later, make it difficult, if not impossible, to enforce any limitation upon the issues. It is possible to say that, if a nation needs $60,000 of money to effect its exchanges, then 60,000 paper dollars may be used, and the general level of prices will remain at its former figure. But if it is practically impossible to limit the paper to 60,000 dollars, then it is idle to speculate about what might be if things were only different from what they are.

3. The least intelligent advocates of government paper say that any kind of money depends for its existence solely upon the action of a government in declaring it to be legal tender. Therefore, if a government makes paper a legal tender, and obliges creditors to re-

ceive it in payment of debts, the paper will be just as good money as gold and silver. All money exists by reason of the "fiat" of the government; hence, anything that the law declares to be money is just as good as any other kind of money. Since we have explained the origin of money, it is not necessary to do more than remind the reader that this claim of the "fiat money" advocates is false in every way. Gold and silver were used as money long before legal-tender laws were ever thought of, and before governments even thought of coining money.

§ 158. It is necessary to admit that paper money might be used for domestic exchanges if only its quantity could be limited. But the chances always are that such limitations will not be observed. The same influences that lead to an excessive coinage of cheap metallic money almost inevitably lead to an excessive issue of paper. *First*, the needs of the government are likely to increase, and to lead to increased issues of paper in order to pay public expenses. In almost every case in our history when governments have issued paper in order to pay extraordinary expenses, they have issued ultimately much more than they originally intended. Thus the Continental Congress began by issuing $3,000,000 of paper in the summer of 1775, but issued $241,000,000 before it ceased to depend upon such means. *Second*, the debtor classes are likely to favor a large issue of paper currency, and to resort to political agitation in order to secure it. This is because excessive issues

Objections to government paper money.

raise prices and depreciate the money. Depreciated money can then be used to pay old debts, and the burden of all debts can be lightened. In the United States we have had repeated instances of such agitation. From 1710 to 1789 the political history of most of the colonies was blackened by the most bitter contests of dishonest debtors to secure an abundance of cheap money. Elections often turned wholly upon this issue, and the lower houses of the colonial legislatures were often controlled by a body of insolvent debtors. Since the Civil War we have had another movement in favor of government issues of paper, and we are still in the midst of an agitation in favor of cheap money. In the United States, as has been shown by two hundred years of experience, the danger of an over-issue of government paper would be very great. Wise men will not refuse to learn by experience.

Government paper money may be viewed as a medium of exchange whose bullion or commodity value is nothing but the insignificant value of a piece of paper, but which is given by act of government a considerable legal-tender power. It will preserve its value as a medium of exchange only so long as its supply is limited according to the demands of trade. It has happened that legal-tender paper, when first put into circulation, has caused no appreciable rise of prices, and has circulated at a parity with gold and silver. Of course such paper drives an equal amount of gold or silver out of circulation, but specie may not entirely disappear until there is a sufficient quantity of paper to

Further objections.

take its place. It may happen, however, that the prospect of unlimited issues of paper may cause a scramble for specie, and may cause specie to disappear more quickly. So soon as gold and silver go out of circulation, the value of government paper will depend solely upon the amount of it which the government decides to issue. As fast as the paper increases beyond the needs of business, prices begin to rise and the paper depreciates. Now there is no limit to the extent to which the depreciation may go. Government paper has no appreciable cost of production. The "bullion" or commodity value is practically nothing, and the paper money may be issued until it becomes absolutely worthless. When the Continental Congress ceased issuing bills of credit, the notes were worth less than three cents on the dollar. It is important to note, also, that this depreciation is independent of any desire or ability of the government to redeem the paper ultimately in gold or silver. Even if redemption at a future date were absolutely certain, the paper would depreciate as soon as it should be issued in excess of the demands of trade. There is, therefore, no limit to the extent to which a paper currency may be inflated.

§ 159. As a general thing, government paper money is not immediately convertible into coin. The government may promise to pay gold or silver in redemption of the notes, but the fulfillment of this promise is almost always postponed for a considerable time. Thus the United States issued legal-tender notes in 1862, and did not begin to redeem

Convertible government paper.

them until 1879. The notes were inconvertible for all this period. Since 1879 the United States has maintained in the Treasury a stock, or reserve, of gold, with which it has been ready to redeem the United States notes, or "greenbacks," whenever they have been presented. The present "greenbacks" are immediately convertible into coin upon demand of the holder, and so differ very materially from government paper money of the usual type.

LITERATURE ON CHAPTER VIII.

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CHAPTER IX.

MONEY AND CREDIT.

I. Credit and Instruments of Credit.

§ 160. Hitherto it has been assumed that money is actually used in effecting every exchange, and that no other method exists by which commodities or services are transferred. But the commercial world uses credit as an instrument for carrying on a large part of its exchanges. Credit may be defined as the power to secure commodities or services at the present time in return for some equivalent promised at a future time. Any credit transaction involves, of course, a certain amount of confidence in the ability of the debtor to make the future payment. Whenever a person can convince others that he is able to make such future payments, he is said to have credit.

Definition of credit.

§ 161. In most credit transactions, the creditor is careful to secure some written instrument which will serve as evidence or proof of the obligation of the debtor to make future payment. A very common credit transaction is seen in the case of book credits. Commodities or services are sold, and the amounts due are charged to the buyers in

Instruments of credit. (1) Book credits.

the account books of the sellers. A may buy supplies to the amount of $200 from B, and B may buy farm produce to the amount of $150 from A. Then at the end of the season A can simply pay B $50, and exchanges to the amount of $350 will be settled by the payment of $50 in actual money.

§ 162. A promissory note is a written promise to pay upon demand, or at some specified time. Such a note may serve as a means of payment in several transactions. The payee, or holder of the note, may, by writing an order on the back and signing his name, make the note payable to a third person. By indorsing the note in this manner, any holder may use it as a means of paying his debts. When the final holder presents it for payment, it may have effected a number of exchanges.

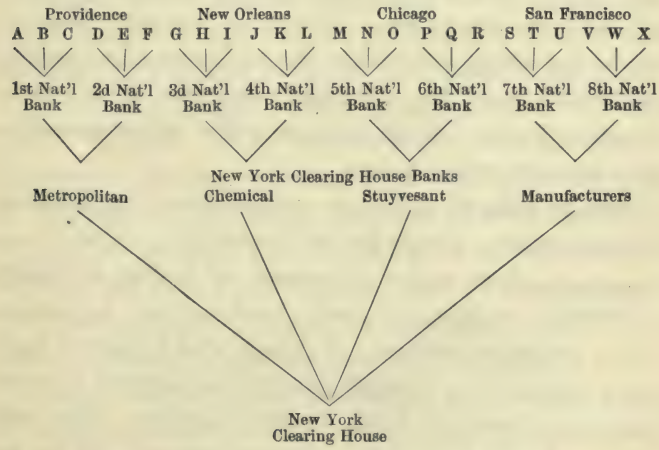
(2) Promissory notes.

§ 163. "A check is an order drawn by an individual or company upon a bank ordering the payment of a certain sum of money to the order of a person named, or to the bearer of the check." A check can be drawn only against a deposit of money in the bank, or against a credit previously agreed to by the banker. Now let us assume that A owes B fifty dollars, that B owes C fifty dollars, and that C owes D fifty dollars. Assume also that the four men have deposits at the same bank. Then A, B, and C may draw checks for fifty dollars payable to B, C, and D, respectively. In due time B, C, and D will deposit at the bank the checks received from A, B, and C, respectively. Then the banker will deduct from the deposits of A, B, and C the

(3) Checks.

amounts of the checks drawn by them, while he will credit B, C, and D with the amounts of the checks which they present. The net result will be that the deposit of A will be decreased by fifty dollars, the deposits of B and C will remain the same, while the deposit of D will be increased by fifty dollars. In this way the three debts may be paid without the actual use of any money. Now, if the four men have accounts with different banks in the same city, the banks will settle their accounts with each other through a clearing house. The customers of each bank deposit with it all checks received by them, and they are credited with the amounts of money represented by such checks. Then each bank takes to the clearing house all of these checks which are drawn upon other banks. At the clearing house it will find that other banks have received checks drawn upon itself. If a bank sends to the clearing house checks to the amount of $10,000, while it finds there checks drawn against itself to the amount of $12,000, the bank will be indebted to the clearing house for $2,000, which balance it will have to pay in money. On the other hand, if the checks drawn upon this bank had amounted to $8,000, the bank would have received the balance of $2,000 from the clearing house. In this manner different banks very conveniently settle all their mutual obligations by merely paying the balances against them, or receiving balances due them, at the clearing house. Banks located in different places settle their accounts with almost equal ease. Banks in country districts have agents, or corresponding banks, in the nearest clearing

house city, so that every clearing house performs this work of settling accounts for the banks of the adjacent territory. Then the New York clearing house acts as a central clearing house for the banks of the entire country, since every important city bank corresponds with some New York bank that is a member of the clearing house. In 1895 the total transactions of the clearing houses of the country amounted to $51,111,591,928. The New York clearing house effected $28,264,379,126 of these transactions. The following diagram, taken from President Andrews' "Institutes of Economics," page 152, illustrates the operations of a national clearing system: —



§ 164. A bill of exchange, or draft, is a written order by which the person who draws the bill orders a second person, the drawee, to pay a specified sum of money

to a third person. Such bills may be payable at sight or after a specified time. They are made payable to a specified person, but by indorsement may be transferred to other persons. When this is done, a single bill may serve to pay several debts before the drawee is called upon to make final payment. Bankers are willing to buy bills of exchange drawn by responsible persons upon their debtors. Also, they are willing to sell drafts to persons who wish to make payments in distant places. These drafts the bankers draw upon the banks with which they correspond in distant cities. Then the bills of exchange and the drafts bought and sold in one city may be set off against bills and drafts bought and sold by corresponding banks in other cities. Money need be sent from one city to the other only when the obligations incurred by one bank exceed the obligations incurred by its corresponding banks. Even then only the balances need be paid by forwarding money.

(4) Bills of exchange and drafts.

Foreign bills of exchange require special explanation. Private banking-houses having branches in several countries make a business of dealing in foreign exchange. Such bankers are sometimes called exchange brokers. A person who wishes to make any payment in a foreign country can procure from an exchange broker a draft on that country. Men who wish to invest capital in a foreign country, to pay for goods bought from foreign merchants, or to travel abroad, can purchase such drafts with which to make the necessary payments. Again, any merchant who

Foreign bills of exchange.

sells goods to a foreign customer can draw a bill of exchange upon that customer, and sell it to an exchange broker. Thus it happens that brokers find a constant demand for drafts upon other countries, and a constant supply of bills of exchange offered for sale.

Now, suppose that the New York branch of a firm of exchange brokers sells drafts on London to the amount of $100,000 during a week, while it buys bills of exchange drawn on London to the amount of $200,000. Then it will owe the London branch of the firm $100,000 for the drafts, and will have $200,000 owed to it by the London branch after the bills of exchange have been presented to the English merchants for payment. One of these accounts can be used to offset the other, and the accounts of the two branches with each other can be settled if the London branch merely sends $100,000 in money to New York. But probably this will not be necessary. During the same week the London branch of the firm may sell drafts and buy bills on New York in such an amount that a balance of $100,000 will be owed by the New York branch. One of these balances will offset the other, so that all the transactions may be settled without the actual payment of any money.

Settlement of foreign exchanges without the use of money.

But now suppose that the course of business is such that many Americans are called upon to make large payments to English creditors, while few Englishmen are owing money in America. Then it will happen that the New York branch will be constantly selling drafts on London,

Money may be needed to settle balances.

while few bills of exchange on London are offered to it. Also the London branch will be selling few drafts on New York, but will be buying many bills of exchange drawn by English merchants on American customers. The result of such a condition of business will be that the American branch will owe each week a considerable balance to the London branch. The managers of the two branches may believe that in two or three months the course of business may turn the other way, so that they will let the accounts run until a turn in the exchanges causes them to balance again. In this manner the expense of shipping money will be avoided. But during the time that the balances are running against the New York branch, the price of drafts on London will be raised, while bills of exchange drawn on London will command a premium. This is because the many drafts on London sold by the New York branch cause an excessive drain on the ready money of the London branch, while the few bills of exchange drawn in New York upon London debtors are insufficient to replenish this money supply. The increased charge for drafts in New York tends to decrease the demand, while it compensates for the additional trouble to which the firm is put to make payments in London. On the other hand, the premium paid for bills drawn on London tends to increase the supply offered, and to furnish the money that is needed in London.

The rate of exchange.

Now, there are limits to the extent to which the price for drafts can be raised, and also limits to the amount of the premium which the brokers

can afford to pay for bills of exchange. The English pound sterling is equal to $4.866 of our money, and the expense of paying freight and insurance on a corresponding shipment of gold across the Atlantic, amounts to about two and one half cents. Now, exchange brokers could not charge much more than $4.866 + $.025 for drafts of a pound sterling on London; otherwise the people who desire to make payments there would find it cheaper to send gold than to buy "exchange," that is, to buy drafts. Similarly the brokers would not pay much more than $4.89 for each bill of exchange on London for the sum of a pound sterling, because it would be cheaper to ship gold from New York to the London branch.

Another case.

Conversely, let us suppose that business conditions are such as to make the demand in England for exchange on New York much greater than the demand in New York for exchange on London. Then the New York branch would find that the London branch was selling many drafts which were being presented in New York for payment, while few bills of exchange were being drawn by London merchants and sent to New York for collection. Also there would be little demand in New York for drafts on London, but many bills of exchange on London would be offered for sale. Then the managers of the New York branch would sell drafts on London for two or three cents less than $4.866 for each pound sterling, since this would be a cheaper method of replenishing the money of that branch than the actual shipment of gold from London to New York. Furthermore, the

price at which the New York branch would buy bills of exchange on London would be less than $4.866. The excessive supply of such bills offered for sale by American creditors would depress their market value. The price could not fall more than three cents below $4.866, since it would then be cheaper for American creditors to instruct their English debtors to make their payments by sending gold. In these ways the prices at which bills of exchange sell in New York, and the prices at which drafts on London can be bought will depend upon the state of the exchanges between the two points. The cost of shipping gold will always determine the extreme limits within which exchange will fluctuate. But by means of drafts and bills of exchange, actual shipments of gold will be avoided in most cases; so that the great mass of foreign transactions will be settled without the use of money. It will be well to add here that the same principles which apply to foreign exchanges apply to domestic exchanges.

§ 165. Bank notes are another form of instruments of credit, and serve to lessen the amount of metallic money used in effecting exchanges. A bank note is simply a promissory note issued by a bank, and is supposed to be payable at the demand of any holder. When banks redeem such notes promptly, bank notes circulate readily from one person to another in payment of debts. Then they lessen the demand for metallic money. But we shall have to notice that a bank cannot issue such notes safely without maintaining a certain "reserve" of specie.

(5) Bank notes.

II. Banks as Institutions of Credit.

§ 166. A bank has been defined tersely as "a manufactory of credit and a machine of exchange." It is important to have some knowledge of the manner in which a bank carries out its functions as an institution of credit. **The bank.**

§ 167. Historically the earliest function exercised by banking institutions was that of receiving for safe keeping deposits of money and bullion. In almost all times such institutions have existed. Modern banking did not originate distinctly in the establishment of banks of deposit, but all modern banks exercise the deposit function. Bankers receive deposits, and hold them subject to the demands of the depositors. Originally they were paid for keeping such money in a place of security; now they make a profit by investing the money, in some cases even paying interest to depositors. This change has taken place on account of the exercise by banks of the function of discount. **The deposit function.**

§ 168. The principal form in which banks lend money at the present day is the form of discount. In bank discount the bank deducts interest on its loans at the time the money is borrowed. Money lenders have, of course, existed in all times and places; but banking institutions, because they combine the functions of deposit and discount, became the principal money lenders of the modern world. They received surplus money for safe keeping; and so easily utilized the idle moneys of a community by loaning them **The discount function.**

to persons who desired to borrow. Depositors could not object to having a banker lend part of their deposits to responsible persons, so long as he managed the transaction in such a way as to be able to meet all their demands. By utilizing deposits in this manner, bankers could afford to receive deposits without charge for keeping them in safety, and in some cases could offer interest as an inducement for people to deposit money, which could be loaned at a higher rate of interest.

§ 169. In combining the functions of deposit and discount the bank becomes distinctively a "manufactory of credit." Suppose a banker to start in business with a capital of $50,000, and suppose that he receives deposits from two hundred customers. His capital serves as a guarantee for the safety of these deposits. Now, some of the depositors will continually draw out a portion of their deposits, while others will increase theirs. As a result, the banker finds that he has usually about $100,000 left in his keeping. He concludes that his customers have about that amount of idle capital which they will prefer to leave on deposit as long as they have confidence in his honesty and business ability. He concludes that, since he always has on his hands about $100,000 of deposits, and $50,000 of his own capital, he can safely lend the larger part of these sums to reliable persons who can furnish adequate security. Now, the persons who borrow money may prefer to leave the money borrowed on deposit with the banker, subject to their drafts by check. If this occurs, a bank creates a deposit when it makes a

Illustration of banking methods.

loan. The deposits in banks regularly increase when their loans and discounts are increased, and conversely.

After receiving $100,000 of deposits, the accounts of the banker would be as follows: **Detailed operations.**

Liabilities.		Resources.	
Capital . . .	$50,000	Cash . . .	$150,000
Deposits . .	100,000		
	$150,000		$150,000

Now suppose that the banker lends to fifty customers $100,000 for ninety days at six per cent interest. Then he will deduct $1,500 for interest, and credit the borrowers with deposits to the amount of $98,500. His account will now stand as follows: —

Liabilities.		Resources.	
Capital	$50,000	Cash	$150,000
Deposits . . .	198,500	Loans and discounts .	100,000
Profits	1,500		
	$250,000		$250,000

Suppose next that various depositors draw out $50,000. Then the accounts of the bank will stand as follows: —

Liabilities.		Resources.	
Capital	$50,000	Cash	$100,000
Deposits . . .	148,500	Loans and discounts .	100,000
Profits	1,500		
	$200,000		$200,000

Now the banker may conclude that he can safely increase his discounts by $80,000. If he lends $80,000

for ninety days at six per cent interest, and the borrowers draw out only half of the $78,800 with which they are credited after $1,200 has been deducted for interest, the accounts of the bank will stand as follows:

Liabilities.		Resources.	
Capital	$50,000	Cash	$60,600
Deposits . . .	187,900	Loans and discounts .	180,000
Profits	2,700		
	$240,600		$240,600

We may summarize these transactions in a few words. The banker used the $100,000 originally left on deposit with him, and the $50,000 which he had for his original capital, as a reserve on the basis of which he incurred liabilities for $177,300 advanced to borrowers in the form of loans and discounts. He now owes depositors $187,900, and has a cash reserve of only $60,600. Manifestly, if all of his depositors should demand payment at once, he would have to fail. On the other hand, at the end of ninety days he will receive $180,000 in payment of the notes that he has discounted. He will then be able to pay his depositors in full, besides having back his capital of $50,000 and profits of $2,700 from his business. How is he able to keep his depositors from demanding all their deposits at one time? Simply by using his credit carefully. He is careful to ascertain just how much money his customers prefer to leave continually on deposit with him, he confines his loans and discounts within the limits set by the probable demands of his depositors, and he lends money only to responsible

persons who can furnish adequate security. Long experience has shown that a reserve of from fifteen to twenty-five per cent of the deposits is sufficient to meet all demands which depositors are likely to make at one time.

§ 170. Deposit and discount are the general and necessary functions which an institution must exercise in order to be a bank. But banking institutions perform a number of other functions of which we shall discuss one only. In some countries banks have had the privilege of issuing bank notes. We have seen that these are simply the banks' promises to pay money on the demand of the holders. It remains to show that they are exactly similar to bank deposits so far as they affect the financial condition of the bank. If, in the case we have supposed, the banker had paid out $20,000 of his notes to his depositors when they demanded money, he would have avoided paying out $20,000 of cash; and would have incurred liabilities of $20,000 for the notes outstanding. Then his accounts would have stood as follows: —

Other functions. Note-issue.

Liabilities.		Resources.	
Capital	$50,000	Cash	$80,600
Deposits . . .	187,900	Loans and discounts .	180,000
Notes outstanding	20,000		
Profits	2,700		
	$260,600		$260,600

If bank notes are to be kept strictly convertible into coin at the demand of the holder, it is necessary at the very least that banks should keep on hand a reserve of

money adequate to redeem all notes presented for redemption. In this country much stricter measures have been taken.

III. Advantages and Disadvantages of Credit.

§ 171. Credit has many advantages, of which the following are the most important: —

Advantages of credit.

1. It economizes the supply of gold and silver. Probably one half of the exchanges of modern civilized nations is carried on through the means of instruments of credit. Moreover, payments of large sums of money and payments between distant places could not be made conveniently in any other way.

2. Credit enables small sums of money to be accumulated by banks, and the large capitals thus gathered to be used in productive industry.

3. Credit tends to place the capital of a community at the disposal of men who are able to employ it most productively. Under normal conditions the man who can employ capital most efficiently is the man who can afford to pay the highest rates of interest, — the man, therefore, who will probably be best able to secure loans.

§ 172. On the other hand, credit has certain disadvantages.

Disadvantages of credit.

1. It leads to indebtedness on the part of the poor for the necessities of life, and often encourages extravagance in consumption. When money is borrowed for purposes of personal consumption, and not for productive enterprises, credit may be an evil.

2. It enables doubtful enterprises to be established with borrowed money. This has been particularly true in the case of railroads. Rascally or incompetent managers of such enterprises borrow money with too much ease from people who know very little about their investments.

3. Credit promotes speculation, and sometimes leads to a too rapid growth of certain lines of industry. When this happens, a business panic may be caused through the failure of such speculative enterprises.

IV. Territorial Distribution of the Precious Metals.

§ 173. We have seen that gold and silver, the money metals, are in general demand the world over. Gold and silver bullion may be sold in all countries as useful commodities; while either gold coins or silver coins, and sometimes both, can be used in paying for purchased commodities. As a medium for the payment of debts, gold has been given decided preference by the commercial world within recent years; but silver is still in general demand as a useful commodity.

General acceptability of precious metals.

§ 174. Whenever, for any reason, the supply of the money metals increases in any region, the coinage of money will increase and the money supply will become larger. This must happen because, otherwise, the increasing supply of bullion would lower the value of each unit below the value of coins containing the same amount of

Gold and silver distributed through changes in prices.

gold and silver, something which cannot take place so long as people are allowed to take bullion to the mints for coinage. Now, as the increased supplies of gold and silver get into circulation as money, prices will tend to rise. When such a rise takes place, more commodities will be imported from other countries for sale at the higher level of prices. On the other hand exports will begin to decrease, because rising prices will increase the money cost of production and will prevent some exporters from competing in foreign markets. Hence the rise of prices will increase imports and decrease exports, until finally imports exceed exports very greatly. Then the large excess of imports cannot be paid for by bills of exchange drawn against sales of exports; but payment must be made by exporting gold or silver, as the case may be. This exportation of gold or silver cannot continue indefinitely. As the supply of precious metals begins to decrease on account of continued exportation, prices will begin to fall. Such a fall in prices will cut off imports and increase exports, until the former no longer exceed the latter. Then the drain of gold and silver will cease automatically. It is clear, then, that high prices tend to lead to exportation of gold and silver, while low prices tend to check such exportation of the precious metals. If prices fall far enough, exports will be greatly increased, imports will be greatly decreased, and gold and silver will flow into the country to pay for the excess of exports sold to foreigners. It appears, therefore, that money tends automatically to move away from any region where it becomes cheap on

account of high prices, and to move toward regions where it is dearer on account of lower prices.

§ 175. Since the precious metals tend to flow away from countries where prices are high, and toward countries where they are low, it follows that there is a constant tendency toward an equalization of general levels of prices in all countries. The purchasing power of money cannot remain permanently very much higher in one country than it is in others. Each country will need a certain amount of money in order to effect its exchanges at the same level of general prices that prevails in other countries. If any country has less than the amount needed for that purpose, prices will fall in that country, and gold or silver will begin to move thither. Conversely, if any nation has more than this amount, prices will rise, and the money metals will flow elsewhere. It follows, therefore, that the world's stock of the precious metals will constantly tend to be distributed among different countries in proportion to their relative demands for the money needed in order to maintain the same general level of prices.

Relative distribution of gold and silver between different countries.

§ 176. Most of the great nations of the world do not produce large quantities of gold and silver. In the few countries where large amounts of the money metals are produced, there is a constant tendency for the value of gold and silver to fall. This means, of course, a somewhat higher level of prices, an excess of imports over exports, and a constant exportation of the precious metals. The result is that gold

Situation of countries that produce the money metals.

and silver tend to move away from the countries where they are produced, and toward countries where their value is not continually lessened through a large production. Of the $2,000,000,000 of gold mined in the United States since 1848 less than one third or one fourth remains in circulation in the country at the present day. The same is true of all the other gold or silver producing countries.

V. Summary of the Theory of Money.

§ 177. We have seen that, originally, money was any commodity which acquired such universal exchangeability as to fit it to serve as a medium of exchange; and that gold and silver gradually displaced all other commodities in this function. In course of time, bills of exchange, checks, bank notes, and government paper money were used as means of paying debts. We saw that bills of exchange and checks can be safely utilized in payment for commodities and services. Bank notes are merely promises to pay money, and are safe only so long as bankers are obliged to keep them strictly convertible into money. Government paper is generally a dangerous medium of exchange, and can be used safely only under the strictest provisions for keeping the notes at a parity with gold or silver. It appears, then, that all these forms of so called "credit money" are based upon promises or obligations to pay gold and silver; and that they become exceedingly harmful as soon as they cease to be immediately convertible into standard gold or silver

What is money?

money. Standard coins of gold or silver cannot be artificially and arbitrarily increased or decreased, and they are accepted as final payment for debts. They are, therefore, the only perfect form of money. All other instruments of exchange are more or less imperfect, and maintain their credit and acceptability only as they are finally convertible into perfect money. We may call all such media of exchange "representative money," while reserving to gold and silver alone the name of money proper. In common usage all media of exchange are spoken of as money, and there is no harm in this so long as one takes care to distinguish money proper from representative money.

§ 178. In discussing the value of metallic money, we assumed that all exchanges are effected solely by means of money. But we have now seen that a very large part of the business of the world (perhaps even more than sixty per cent) is carried on without the actual use of anything but instruments of credit. How does this fact affect our conclusion that the value of metallic money is determined *primarily* by the demand for such money and the supply, while the cost of production exercises an *ultimate* influence? It merely obliges us to take account of the influence of instruments of credit in determining the demand for gold and silver and the effective supply of such money.

Influence of credit upon prices.

§ 179. In the words of Mr. Mill, credit "is purchasing power; and a person who, having credit, avails himself of it in the purchase of goods, creates just as

much demand for the goods, and tends quite as much to raise their price, as if he made an equal amount of purchases with ready money." A bill of exchange or check or bank note or book credit is an instrumentality by means of which there is carried on a credit transaction that increases the demand for commodities. Therefore the total demand of a community for commodities depends upon, *first*, the volume of money, *second*, the number of credit transactions, or the volume of credit. Any cause that contracts or expands the volume of credit will surely tend to lower or to raise prices of commodities. The limit to which credit may be extended depends largely upon the confidence of investors and possible creditors that business prosperity will enable debtors to make repayment, and upon confidence that public and private honesty will enforce the fulfillment of lawful obligations. It is truthfully said, therefore, that the basis of modern business is *confidence*. Without the confidence upon which credit is built up, probably sixty per cent of the transactions of the modern business world would be impossible. In times of commercial crises, the visible cause of disaster is a violent contraction of credit which greatly lessens the demand for commodities, and leads to a sharp fall of prices.

The general effects of credit.

§ 180. Credit transactions are all alike in that they furnish means of payment to purchasers who help to increase the demand for commodities. But they differ in the exact manner in which they accomplish this result.

Detailed explanation of the influence of credit.

1. Book credits, bills of exchange, and promissory notes merely serve to effect a large number of exchanges without the use of money. They diminish the amount of metallic money needed to effect the exchanges of a community or a nation. They may be considered either to increase the amount of the medium used for exchange, or to decrease the demand for metallic money.

2. Checks can be used only by persons who have claims on bankers for certain sums of money. In order to meet such claims of depositors, bankers have to keep a certain reserve of actual money. So also with bank notes. They must be issued against a reserve sufficient to insure their convertibility into coin. Bank reserves are used as the basis for the issue of a much larger amount of representative money in the form of checks and bank notes. Each coin of the reserve enables many more exchanges to be carried on than could be effected if the coin were itself in circulation. Checks and bank notes, therefore, merely increase the efficiency of a given number of coins, and virtually increase the supply of metallic money to that extent.

3. The late President Walker summed the matter up as follows: "While thus, through the operation of the Credit System, the occasion for the use of money is largely reduced in modern industrial society, and thus the demand for money is diminished, the efficiency of a given body of money is continually being heightened by improvements in the art of banking, and thus the supply of money is practically increased."

§ 181. Under modern conditions, metallic money serves, (1) as a medium of exchange in those transactions where credit instruments cannot be used, or are not used; (2) as a reserve for the circulation of representative or credit money. But the amount of representative money that can be issued against a definite reserve is quite strictly limited, and cannot be increased safely beyond a certain point. Hence it can be stated that, as the volume of metallic money increases, there may be a considerable increase in the volume of representative money; and conversely. In the case of book credits and bills of exchange used to pay debts, there may be no such narrow limits to the increase of credit instruments. Yet the habits and business customs of a people set final bounds to the increase of such credit transactions. We conclude, therefore, that modern business needs a large amount of metallic money for a medium of exchange; and that the volume of credit is, at any time, limited by the volume of metallic money available for use as a reserve.

Credit limited by volume of metallic money.

§ 182. The general level of prices depends, therefore, upon the value of metallic money. The value of metallic money depends primarily upon the demand, as decreased by the use of credit substitutes,[1] and upon the supply, as increased by the heightened efficiency of money when it is used as a reserve for the circulation of checks and bank notes. The money value

Summary.

[1] It may be well to point out that barter has the same effect as credit in diminishing the demand for money.

and the bullion value of gold and silver will always be the same when free coinage is allowed. Ultimately, the cost of production must exercise an influence upon the supply of the precious metals; and will, in the long run, tend to make their value approximate the cost of producing the marginal portion of the supply.

LITERATURE ON CHAPTER IX.

General references as in the last chapter.

For Detailed Treatment of the Credit System, including Banking: BAGEHOT, Lombard Street; BOLLES, Practical Banking; CARROLL, Principles and Practice of Finance; Dictionary of Political Economy, "Banks"; DUNBAR, Theory and History of Banking; GOSCHEN, Foreign Exchanges; MACLEOD, Elements of Banking.

CHAPTER X.

MONETARY HISTORY OF THE UNITED STATES. BIMETALLISM.

I. Monetary History of the United States.

§ 183. In 1792 Congress established a national coinage. Silver and gold coins were made legal tender at a ratio of fifteen grains of silver for one grain of gold. Soon afterward silver cheapened so that 15.61 grains were required in the bullion market to purchase one grain of gold. As a result, gold went out of circulation; and the country was thrown upon a silver basis. In 1834 and 1837 Congress changed the legal ratio of the two metals by reducing the fine contents of the gold coins. The silver dollar was given a gross weight of 412.5 grains, and pure contents of 371.25 grains. The gold eagle was reduced to pure contents of 232.2 grains, and to a gross weight of 258 grains. This gave a legal ratio of 371.25 grains of silver for 23.22 grains of gold, or 15.988 to 1. The weights of the coins, hence the legal ratio, have remained unchanged since 1837. This new ratio of nearly 16 to 1 overvalued gold so decidedly that silver coins began to disappear from circulation. In 1850 the silver dollar was worth $1.02 in gold, and had entirely disappeared from use. Three

Coin currency 1792–1862.

years later the discovery of gold in California cheapened gold still more, so that Congress had to debase the fractional silver coins in order to prevent them from being melted up and sold for bullion. Our small silver coins have been debased ever since. The legislation of 1834 and 1837 threw the United States upon a gold basis. The gold dollar was the sole standard of value in practical use after 1834.

§ 184. In 1862 Congress issued legal-tender paper money, after unwise action by the Treasury Department had forced the banks of the country to suspend specie payments, that is, to refuse to meet their obligations in coin. These United States notes, or "greenbacks," immediately depreciated. Gold went out of circulation, and could be secured only by paying a premium. Paper money or currency prices rose as fast as the greenbacks depreciated. In 1864 each note was worth only 49 per cent of its face value. The United States had the privilege of paying higher prices for everything that it bought, so that the cost of the Civil War was fully one billion dollars more than it would have been otherwise. In 1875 Congress authorized the Secretary of the Treasury to sell bonds in order to procure enough gold to enable him to begin to redeem the greenbacks in coin after January 1, 1879. In 1878 Congress decided to leave $346,000,000 of greenbacks in circulation, and directed that the notes should be reissued from the Treasury whenever they should be redeemed or paid in for taxes. The greenbacks, therefore, still circulate, and the government endeavors to maintain a

The greenbacks of 1862.

reserve of $100,000,000 in order to redeem them whenever desired.

The national banking system.

§ 185. Between 1789 and 1860 many banks were established in the various states. At first they were conducted recklessly and dishonestly. Large quantities of notes were issued by banks that had no intention of redeeming them. In 1814, 1837, and 1857 there were general bank suspensions throughout the country. The first and second Banks of the United States issued notes which were kept convertible into coin. Gradually, in the older and more conservative states, restrictions were placed on the issue of bank notes; and the banking business began to be honestly conducted. In 1860 it had been placed on a sound and honest basis in the northern and eastern states. In 1863 and 1864 Congress established the national banking system, and allowed national banks to issue notes upon the following conditions: —

1. A Comptroller of the Currency was placed in charge of the administration of the banking laws. Each bank was required to report its condition to him five times annually, while examiners were appointed to examine the affairs of each institution.

2. Each national bank must have a capital of not less than $50,000, and stockholders are liable for the debts of the bank to double the par value of their stock.

3. A certain proportion of the capital of each bank must be invested in registered interest-bearing bonds of the United States, deposited in the national Treasury.

4. On the security of these bonds a bank may issue

notes not exceeding ninety per cent of the market value of the bonds; but the notes can never exceed ninety per cent of the par value of the bonds.

5. These notes are not legal tender; but are receivable for taxes, except for duties on imports, and are receivable for payments to any national bank. Each bank must redeem its notes on demand in legal-tender money.

6. Banks must deposit in the Treasury a fund equal to five per cent of their outstanding circulation. Thus the United States undertakes to redeem notes presented at the Treasury; and would do so even if the fund proved insufficient, having adequate security in the bonds and in a first lien upon the assets of a bank. Consequently the notes are practically guaranteed by the government.

7. Each bank must keep a reserve of lawful money. In smaller cities a reserve of fifteen per cent of the deposits is required. In the "reserve cities" a reserve of twenty-five per cent is necessary. Banks in smaller cities may deposit sixty per cent of their reserves with banks in reserve cities. Banks of reserve cities may deposit fifty per cent of their reserves with banks in "central reserve cities," that is, in New York, Chicago, and St. Louis.

8. Banks are taxed one per cent on their average circulation each year. The notes formerly issued by state banks have been taxed out of existence by a tax of ten per cent, which made such issues unprofitable.

National bank notes have possessed the virtue of

being thoroughly uniform throughout the country and absolutely safe. Moreover, a strict enforcement of the law has secured an honest management of the national banks, as a rule. State and private banks have had to make their methods equally safe, under penalty of losing business. Undoubtedly the banking business in the United States has been greatly elevated as a result of the national banking laws.

Results of the national banking system.

§ 186. In 1870, with a view to the future resumption of specie payments, Congress began to consider the question of revising the coinage laws. The silver dollar had then been out of circulation for more than a generation, and was worth $1.027 in gold. A committee of experts submitted the draft of a bill recommending that the coinage of the obsolete silver dollar should be stopped. After considering the subject during five successive sessions, in the course of which the bill was printed thirteen times, Congress passed an act which dropped the silver dollar from the list of authorized coins. This provision of the measure aroused no opposition, and members of Congress repeatedly stated that the intention was to establish legally the single gold standard. Yet it has been wrongly charged that this measure passed Congress, "secretly," or "inadvertently," or even with absolute fraud.

The "Act of 1873."

§ 187. After 1873 silver began to fall in value rapidly. In 1876 the gold value of 371.25 grains of fine silver was only eighty-nine cents. At the same time preparations were being made

The "Bland-Allison Act."

for redeeming the greenbacks in gold, and bringing the country back to a gold basis in 1879. Then people saw that, if the coinage of the silver dollar had not been stopped by the law passed in 1873, the cheapened dollar might have come back into circulation and driven out gold. Thus arose a demand for the free and unlimited coinage of the silver dollar, and the cry was started that silver had been "demonetized" fraudulently in 1873. Yielding to this agitation, Congress in 1878 passed the "Bland-Allison Act." This provided that the United States should purchase monthly not more than $4,000,000 worth of silver bullion and not less than $2,000,000 worth. The bullion was to be coined into the old 371.25-grain silver dollars, and such dollars were made full legal tender. Under this act the Treasury always purchased the minimum amount, and placed $378,166,793 in circulation between 1878 and 1890. Contrary to the expectation of many people, this amount of silver proved to be no more than the business of the country could use without driving gold out of circulation, especially since the volume of bank notes decreased about $170,000,000 between 1882 and 1890. On the other hand, the law failed to raise the value of silver, contrary to the claim which had been made for it. In 1889 the value of the bullion in the silver dollar was only seventy-two cents.

Gold and silver certificates.

§ 188. The United States issues gold and silver certificates upon deposits of gold and silver coins. The gold certificates are of large denominations, the silver are of denominations as small as one dollar. These certificates are

not legal tender, but are receivable for taxes, and may be held by national banks as part of their reserves.

§ 189. In 1890 the friends of silver pushed the "Sherman Act" through Congress, and repealed the "Bland-Allison Act." The new law required the Secretary of the Treasury to purchase monthly 4,500,000 ounces of fine silver bullion at the market price, which was not to exceed $1 for 371.25 grains of fine bullion. The purchases were paid for by issuing Treasury notes, which were redeemable in coin at the Treasury, and could be reissued. These notes were also made legal tender. Even these increased purchases of silver failed to raise its price, which, after a brief rise, fell to sixty cents for 371.25 grains of bullion in 1893. The effects of the "Sherman Act" were wholly disastrous. Between 1890 and 1893, Treasury notes to the amount of $155,931,000 were placed in circulation. During the same period the net exports of gold exceeded $150,000,000, in spite of the fact that our exports of merchandise exceeded imports very greatly. Apparently the country, by 1890, had absorbed about all the silver it could use, so that the Treasury notes merely drove an equivalent amount of gold out of the United States. In any event, the act caused considerable fear that the United States would be driven onto a silver basis. Immediately after its passage, the banks began to hoard gold, and to pay their obligations in paper or in silver. The government's revenues were paid almost entirely in paper or in silver money, instead of being paid largely in gold as was the

The "Sherman Act" of 1890.

case prior to 1890. Moreover, the holders of greenbacks and Treasury notes began to present them at the Treasury, and ask for payment in gold. When this was done, the government feared to refuse gold and to attempt to redeem the notes in silver, since such a course would have discredited both its silver and its paper money. Thus it was compelled to pay out large quantities of gold, while its revenues were composed chiefly of paper and silver. In 1893 such an acute stage of panic was reached that the "Sherman Act" was finally repealed.

§ 190. The United States now has the most heterogeneous currency to be found in any civilized country. On August 1, 1896, the gold in the country was estimated at $564,000,000, — a figure which is undoubtedly too large. Of this sum, $119,371,284 were in the Treasury. At the same date the Treasury was endeavoring to keep in circulation at a parity with gold the following amounts of debased money: —

Heterogeneous character of our currency.

United States notes, or greenbacks	$346,681,016
Standard silver dollars or certificates representing dollars	431,852,041
Treasury notes of 1890	128,343,280
Subsidiary silver coins	75,667,706
Total	$982,544,043

In addition to this, national bank notes were outstanding to the amount of $226,030,042.

In order to keep this mass of debased money from depreciating and driving gold to a premium, two things

are necessary: *first*, the volume of debased money must not exceed the demands of trade; *second*, the Treasury must be in a position to redeem promptly in gold the $475,000,000 of greenbacks and Treasury notes that represent its demand liabilities. Since 1890 there has been some danger of our present debased money proving excessive, while the agitation for the "free and unlimited coinage" of silver has constantly threatened an excessive inflation of cheap money. This fact has led to a tendency to discriminate against our silver and paper money. This discrimination has obliged the Treasury to redeem $478,000,000 of greenbacks and Treasury notes in gold, between July 1, 1890, and July 1, 1896. On the other hand, it has largely cut off the gold revenues of the government. In order to maintain the gold reserve, the government has had to issue bonds as the only means of securing gold. The present situation, therefore, is a difficult one. It cannot improve until the threat of an inflation of cheap money is ended, and the people cease to discriminate against our silver and paper currency. If confidence on this point can be restored, it is possible that a revival of business will increase the demand for money, and will enable the country to use all of its present stock of debased currency. The position of the United States Treasury could be made safer by retiring the greenbacks, and providing for an increased bank-note circulation in their place, but it is hardly probable that this will be done in any near future, although many able financiers are in favor of it.

Precautions necessary to maintain our silver and paper at a parity with gold.

II. Bimetallism.

§ 191. Prior to the present century most civilized countries made gold and silver legal tender in payment of debts. Each nation, by independent action and often with an independent legal ratio, sought to keep both metals in circulation, and to give to debtors the option of paying debts with either gold or silver coins. The usual result of such attempts was that one metal or the other went out of circulation as often as a change in the market ratio of silver and gold bullion cheapened one kind of coin or the other. The experience of the United States after 1792 or 1834 illustrates the usual results of "national bimetallism," the term applied to such attempts of individual nations to make both gold and silver circulate at a fixed ratio.

National bimetallism.

§ 192. In 1816 England debased her silver coins, made them legal tender only for small payments, and made gold the sole legal-tender money. In 1871 and 1873 Germany established a national gold coinage, and withdrew most of the old silver coins that had formerly circulated in the various German states. In 1873 the United States relegated silver to a position as subsidiary currency. Meanwhile the world's annual production of silver was increasing from about 30,000,000 ounces in 1860 to 78,775,602 ounces on an average for the period 1876–1880. At this time France and a few other countries, which formed the Latin Monetary Union, still held their mints open to the

Gold monometallism.

free coinage of silver at the ratio of 15.5 to 1. Silver cheapened so greatly that it began to flow in large quantities to the French mints, and France became afraid that all her gold would be soon replaced by the cheaper silver coins. In 1876, when the market ratio of silver to gold had fallen to 17.88 to 1, the French mints were closed to silver; and the coinage of the white metal ceased. Since then, Austria has passed from a depreciated paper currency to a gold basis, and other countries have shown a desire to adopt gold monometallism. The present century, therefore, has seen a decided drift toward the adoption of a single gold standard by civilized countries.

§ 193. Most of the countries of Asia and of South America have the single silver standard. Since 1893, however, the mints of India have been closed to the further coinage of silver. At the present writing news comes of the practical acceptance of the gold standard by Japan, through the adoption of a legal ratio of 33.33 to 1.

Silver monometallism.

§ 194. Within the last thirty years the scheme of international bimetallism has often been proposed. Its advocates have usually admitted that national bimetallism is impossible, and results in the exclusive use of the cheaper metal. But they claim that, if the principal nations of the civilized world should agree to make both metals legal tender at a fixed ratio, and should allow free coinage of both under such conditions, it would be possible to keep both metals in concurrent circulation. On this proposition scientific

International bimetallism.

authorities are divided at the present time. It will be necessary to review the arguments advanced for and against international bimetallism.

§ 195. It is claimed that bimetallism is desirable because it would give a more stable unit of money than either gold or silver monometallism could secure. The world's stock of both of the precious metals is so large that a change in the production of one would not greatly affect the value of the whole mass. Under monometallism, a change in the production of the money metal more quickly affects the value of that metal. Moreover, with bimetallism, an increase in the production of one metal might be offset by a decrease in the production of the other. This claim is correct, *provided* that it can be proven that it is possible to hold the two metals together at a legal ratio.

The desirability of bimetallism.

Bimetallists call attention to the fact that there has been a general fall of prices in all gold standard countries since 1873. This was once denied, but is now admitted by all.[1] This fall, bimetallists say, has injured debtors by increasing the burden of debts; moreover, it has depressed industrial enterprises, and will do so as long as it continues. The bimetallist attributes this fall of prices to the fact that since 1873 silver has been

Bimetallist argument from the fall of prices.

[1] For the index numbers from which the fall of prices is ascertained, see FISHER, Appreciation and Interest, 98–100; TAUSSIG, Silver Situation, 91–92; ATKINSON, Bimetallism in Europe, 602, 633. Also a Bulletin on "Movement of Prices, 1840–1894," published by the Bureau of Statistics, Treasury Department, Washington, 1895.

"demonetized" in many countries. The principal commercial nations now have the single gold standard. Gold monometallism has increased the demand for gold, and has raised its value.

Gold monometallists attribute the fall of prices to improvements in production that have decreased the cost of producing commodities. But this does not change the fact that the ratio in which gold exchanges for commodities has altered, and that the purchasing power of gold has risen. It does, however, make it probable that falling prices have been due to an increasing supply of commodities more than to an absolute decrease in the supply of gold money. Gold has become more scarce, not absolutely, but relatively to the larger production of commodities. This diminishes the injury that can be done to debtors. Prices may have fallen, but new methods and appliances turn out a larger product; so that about the same money return can be secured from a business enterprise. This consideration has force when applied to industries where new methods have been introduced, but does not lessen the burden laid upon a debtor whose business has not been affected by improvements. Finally, monometallists say that debts are contracted in money, not in commodities nor in general purchasing power. From 1850 to 1873 prices rose; since 1873 they have fallen; in a few years they may rise again. Such changes are a part of the risk incurred by persons who enter into long-time contracts. They might occur under bimetallism. In any case, we

Reply of gold monometallists.

ought not to interfere with *past* contracts. We may admit this, and yet may insist that it is advisable to lessen the risks of changes in prices that may affect *future* contracts.

Bimetallists urge that the world's stock of gold is not sufficient for the money demand of the world, and that gold monometallism must lead to a continued fall of prices. Geological conditions are such that "we must expect in the future a scarcity of gold and an abundance of silver, and that the extension of the gold standard to all civilized states is impossible." Between 1870 and 1890 the annual production of gold averaged hardly more than 5,200,000 ounces, with a value of about $108,000,000. The annual consumption of gold in the arts in civilized countries has never been estimated at less than $60,000,000. Besides this, a large quantity, estimated by the highest authority as not less than $20,000,000, is exported annually to the semi-civilized countries of Asia and Africa, where it is hoarded or used for ornaments. This leaves only about $25,000,000 of gold for making good the loss of existing coins by abrasion, and for supplying the needs of increased trade.[1]

Arguments from the alleged insufficiency of the world's stock of gold.

The force of this argument of insufficiency in supply is weakened by the phenomenal increase of the gold output since 1890, as shown by the following table, on page 294: —

Recent gold production.

[1] For statistics on these points, see SOETBEER's tables, in ATKINSON, Bimetallism in Europe, 504–528.

Year.	Fine ounces produced.	Value of product.
1890	5,749,306	$118,848,700
1891	6,320,194	130,650,000
1892	7,102,180	146,298,000
1893	7,608,787	155,522,000
1894	8,737,788	180,626,100
1895	9,688,821	203,000,000

For 1896 a preliminary estimate shows a product valued at about $220,000,000. The prospect is that the next few years will see equally large outputs. The largest average annual product ever before known was 6,486,000 ounces, produced between 1856 and 1860. The value of the gold output alone is larger now than the combined values of the annual gold and silver output from 1871 to 1875, when silver was "demonetized." This is shown in the following table, in which the silver product is valued at the ratio of 16 ounces for 1 ounce of gold: —

Year.	Silver.	Gold.	Total.
1871–1875 Annual average	$81,864,000	$115,577,000	$197,441,000
1895	. . . . .	203,000,000	
1896 (approx.)	. . . . .	220,000,000	

Improvements in the art of producing gold from poorer ores, stimulated by the recent appreciation of gold, are likely to make the product large for many

years. In the remote future it may decrease again; but, for the present, arguments drawn from the scarcity of gold have very much less force than they possessed before 1890. The question may arise, Why does not the increased production of gold lead to a rise in prices? The explanation probably is that several years are required for a change in the annual output to affect the value of the world's large stock of gold.

Bimetallism is declared to be desirable because it would establish a fixed par-of-exchange between all countries. An English merchant trading with a silver standard country has to sell at silver prices. He receives payment in bills drawn in terms of silver, and the gold value of these silver bills may vary between the time that goods are sold and the time that they are paid for. Such fluctuations introduce an element of uncertainty and speculation into legitimate trade between gold and silver standard countries. If gold and silver were held together at a fixed ratio by international bimetallism, then this element would be eliminated from the trade with silver-using nations. This may be admitted to be desirable.

Arguments for a fixed par-of-exchange.

§ 196. The crucial consideration concerning bimetallism is the question of its practicability. Bimetallists urge the following arguments: —

1. If the principal nations of the commercial world should agree to allow free coinage of gold and silver at a fixed ratio, say 16 to 1, both metals could be kept in concurrent circulation. If either should cheapen, there

would be a general tendency for debts to be paid in that metal. The demand for the cheaper metal for coinage purposes would be as large as the entire demand of the commercial nations for money. This demand would raise the value of the cheapened metal. On the other hand, the demand for the dearer metal would fall in proportion as the demand for the cheaper increased. World-wide changes in demand would, therefore, restore the parity of the two metals at the legal ratio.

Is international bimetallism practicable on economic grounds?

2. This plan differs from national bimetallism since, under the latter policy, the dearer metal could be exported to either gold or silver standard countries where it would be in demand; while the cheaper metal would gradually flow from the countries that produced it to the mints of the nation that overvalued it. With international bimetallism, if gold should become dearer than silver at the legal ratio, it could not be exported to any countries where the demand for it would maintain its higher value. This is because all the principal commercial nations, now on the gold standard, are supposed to be in the bimetallic league. If one or two should refuse to enter, they would have to maintain the value of gold by their individual demands.

3. Bimetallists assert that the experience of France from 1803 to 1874 illustrates the practicability of their policy. During that period France admitted both gold and silver to free coinage at the ratio of 15.5 to 1. From 1803 to 1850 silver was usually slightly cheaper

than gold at that ratio, while from 1850 to 1873 the case was reversed. In every year but one, both metals were offered at the French mints for coinage; although the silver coinage exceeded gold from 1806 to 1850, and gold exceeded silver from 1850 to 1873. Conditions at the present day would not be so favorable for another experiment with national bimetallism. Prior to 1873 some countries of Europe used silver and others gold, so that the strain on the French system was lessened.

The position of the gold monometallists.

§ 197. Gold monometallists have often showed that national bimetallism has regularly proved a failure, — even France feeling obliged to change her policy in 1876 on penalty of losing her gold. But such arguments fail to touch international bimetallism. More pertinently, monometallists argue that international bimetallism means, at the present day, the attempt to make gold and silver legal tender at some such ratio as 15.5 to 1, 16 to 1, or 20 to 1. These ratios all overvalue silver, for the actual market ratio is now 31 to 1 or 32 to 1. Monometallists say, therefore, that the results of international bimetallism can be determined by asking, What would happen if the governments of leading nations should attempt to make gold and silver legal tender at a ratio that overvalued silver? Their answer is that gold, the dearer metal, would quickly cease to be used as legal-tender money; and silver would become the sole legal-tender money in circulation. They deny that gold would fall in value the moment it ceased to be demanded as legal tender. It would be used first as a commodity, in

which use its utility would be unaltered. Second, it would circulate in payment of debts at a premium over the legal value placed upon it at the mints. Monometallists recognize that governments can compel creditors to receive cheap silver money for past debts, but deny that the commercial world can be forced by law to use it in future payments. Gold has gradually displaced silver as the medium for the largest commercial transactions because of its superior convenience. At the present time the commercial world dislikes and distrusts silver, and would refuse to make future contracts in that money. Consequently gold would be demanded for future payments, and future contracts would be made in terms of ounces or grains of gold. In other words, monometallists insist that the commercial world would choose its own money in future payments, without regard to legal-tender laws. They assert that the laws making gold legal tender have little power to affect its value, since it would be used as money by the commercial world without such legislation. The law should recognize this fact. In any case legal-tender laws would, in the end, prove powerless to overcome this preference. Thus international bimetallism would fail at the outset.

§ 198. The practicability of bimetallism turns finally on this last point raised by the gold monometallists. If an international agreement should induce the business world to make future contracts in either gold or silver at a fixed legal ratio, then it is probable that the changes in the demand for the two

Concluding considerations.

metals would maintain them at a parity for a long time, at least. But, if the commercial world should refuse to make future contracts in the bimetallic standard, the outcome would depend upon whether this demand of business circles should prove sufficient to maintain gold at a ratio higher than that fixed by law. It seems improbable, however, that there should be sufficient discrimination against silver to produce such a result. International bimetallism could hardly be adopted unless the commercial interests of leading countries should favor it. In the nature of the case, therefore, there would hardly be sufficient discrimination against silver to maintain the value of gold above the legal ratio.

§ 199. It is necessary to add that the political difficulties in the way of an international bimetallic agreement are considerable. It is doubtful whether such an agreement could be secured in any near future. More than this, the outbreak of war between two of the states of a bimetallic league might lead each of the contending nations to make a sudden attempt to secure gold, the metal in which most reliance could be placed. As a matter of fact, political considerations, especially those of a military nature, have been partly responsible for the movement of European countries toward the single gold standard.

Political obstacles to bimetallism.

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CHAPTER XI.

MONOPOLIES.

I. The Nature of Monopolies. Monopoly Value.

§ 200. A monopoly exists whenever one person or a combination of persons acquires control of the supply of a commodity. This control may be secured temporarily by buying up the available supply, or more permanently by gaining the exclusive or nearly exclusive power to produce. A monopoly of the first kind will be a temporary affair, because producers will increase their outputs in order to profit by the higher prices usually fixed by monopolists. With the second class of monopolies permanent success is more probable.[1]

Definition of monopoly.

§ 201. When a single person or combination of persons controls the supply of any commodity, it is possible to control the price. This can be done by increasing or decreasing the supply so as to induce the public to buy at prices that shall make the business as profitable as possible. With freely

Monopoly value.

[1] Some monopolies have been the sole purchasers of the raw materials used by them. Their influence, therefore, has extended to a control of the prices at which the producers of the raw materials must dispose of their products. Such monopolies have a substantial control of the *demand* for the raw materials.

produced commodities no person is able to control the supply, hence the price, in this manner. If he reduces his output, other producers will extend their sales at his expense. He must sell as many goods as can be disposed of at prices that leave a profit after paying expenses. Thus in competitive industries producers will make the largest profits by extending production until prices approximate the marginal expenses of production. Now the monopolist acquires the power to control the supply. Monopoly prices, therefore, will not be governed by the forces that control prices of freely produced commodities.

A person may acquire power to fix the price of a commodity without controlling all the supply. Repeated instances have shown that control of over half the supply may enable a monopolist to dictate prices. As Mr. Sidgwick says, "a partial control may render possible and profitable an artificial rise in the price of the commodity, even though the remainder is supplied by several sellers freely competing; if only the proportion controlled is so large that its withdrawal would cause a serious scarcity, and thus considerably raise the competitively determined value of the uncontrolled remainder."

Monopolists need not control the entire supply.

Monopoly prices tend to be adjusted so as to yield the monopolist the largest net income. In determining what price will yield the highest net return, the following principles may be recognized:

Monopoly prices are fixed at the point of highest net return.

1. As the monopolist decreases the supply, he tends to increase the marginal utility of his

product; and *vice versa*. The rapidity with which marginal utility varies with changes in supply depends upon the character of the demand. The demand for luxuries is far more elastic than the demand for necessaries; so that changes in supply affect the marginal utility of necessaries more rapidly than they affect the utility of luxuries (§ 116).

2. Certain expenses of production will increase or decrease nearly proportionately with each increase or decrease of the product.[1] Expenses for raw materials and common wages are of this character.

3. Other expenses remain nearly the same whether the product is larger or smaller, within certain limits. These are fixed expenses (§ 127).

4. The intelligent monopolist, desiring to secure the maximum net revenue, will disregard any expenses that are fixed; and will consider, first, the quantity of his product demanded at various prices, and second, the variable expenses for each unit of supply. Suppose that the fixed annual expenses of a street railway company for interest on borrowed capital, for salaries of principal officials, and for other outlays that do not vary with the amount of business transacted, are $40,000. Suppose that the variable expenses amount to two cents for each passenger carried. Then suppose

[1] In some cases these expenses will increase more than proportionately when the supply is increased beyond a certain point. This is true of industries in which the point of diminishing returns is quickly reached, so that the increased supply of raw materials has to be produced on new lands that offer poorer advantages. Sometimes a supply can be somewhat increased without increasing the variable expenses proportionately.

that, at a fare of ten cents, 600,000 passengers will be carried in the course of a year; and that each reduction of fares brings a larger traffic, as represented in the table given below. The effect of each change of fare upon the net revenue of the company will be as follows: —

Fare.	Passengers Carried.	Total Earnings.	Variable Expenses.	Net Earnings.	Fixed Expenses.	Net Revenue.
10	600,000	$60,000	$12,000	$48,000	$40,000	$8,000
8	800,000	64,000	16,000	48,000	40,000	8,000
6	1,400,000	84,000	28,000	56,000	40,000	16,000
5	2,000,000	100,000	40,000	60,000	40,000	20,000
4	2,500,000	100,000	50,000	50,000	40,000	10,000
3	4,000,000	120,000	80,000	40,000	40,000	

5. The intelligent monopolist will not charge the highest prices that he could compel any consumer to pay. He will lower prices whenever the increased demand will more than counterbalance the reduction of rates and the increase of variable expenses. In our illustration, five cents is the fare that yields the largest net returns. Furthermore, the fixed charges have no influence upon the prices. If a fixed tax, say of $10,000 a year, should be exacted, the fare would not be raised; for such a course would diminish the net earnings out of which all fixed charges must be paid, and the tax would come out of the net monopoly revenue. On the other hand, a variable tax, say of one cent for each passenger, would increase the variable expenses so that a fare of six cents would yield the largest net returns. Taxes on the net revenue of monopolies cannot be shifted.

II. Classes of Monopolies.

§ 202. A monopoly may originate in the possession of rare personal faculties and acquirements. Every free person has exclusive disposal of his natural or acquired powers; but if many other people possess the same faculties in an equal degree, no one can have a monopoly, that is, a control of the supply of the services that his personal abilities enable him to render. On the other hand, *exceptional* ability that very few other people possess confers upon a person a substantial monopoly in the field in which his talents lie. A famous singer, an exceptional physician, an author of peculiar talent, or a business manager of unusual ability may enjoy a partial or nearly complete monopoly of the supply of valuable services.

1. Personal abilities.

§ 203. Other private monopolies are created by law. Formerly kings granted to private individuals monopolies of many trades and manufactures in return for payments to royal treasuries. At the present day patents and copyrights are forms of legal monopolies. These are intended to promote invention and the arts by securing to inventors and authors exclusive rights to their products for a limited period of time. Giant monopolies have been created behind patent rights, as the telephone monopoly in the United States.

2. Legal monopolies.
a. Private monopolies.

Governments may create public monopolies of certain industries for the purpose of deriving revenue from such sources. Fiscal monopolies of this character still exist

in Europe, where the manufactures of tobacco, salt, and matches are carried on exclusively for the profit of various governments. The United States has a monopoly of the postal business, — a monopoly, however, which is not made a source of revenue.

Legal monopolies.
b. **Public monopolies.**

§ 204. The use of land, of mines, or of water privileges, is necessary to production. Some of these natural agents are narrowly limited in supply; hence it is easy, so long as private ownership is allowed, to monopolize them. Practically all of the anthracite coal of the United States is found in a small area in Pennsylvania, and it has been possible for the ownership of these coal fields to pass into the hands of a monopoly. Similarly, the petroleum fields are in process of monopolization. Water powers, facilities for irrigation, and docks giving access to navigable waters are often monopolized. Steam railroads sometimes possess terminal facilities in large cities that cannot be duplicated, and therefore tend to create monopolies. In some instances street railroads have been granted locations in peculiarly desirable streets, so that they monopolize the larger part of the business of their cities. Steam railroads, when granted rights of way through mountain passes or narrow river valleys, possess practically exclusive channels of communication between different sections of a country. In these cases, monopolies control the supply of commodities or services on account of exclusive advantages of location.

3. Natural monopolies.
a. **Monopolies of location.**

A second group of natural monopolies originates in

the necessity of consuming products or services in connection with the plants from which they are supplied. Gas, water, and electric light can be supplied to consumers only by extending pipes and wires to places where the commodities are used. Such things can be secured only from companies owning plants in the immediate locality where consumers live. The same is true of steam and street railroad facilities. Such services cannot be supplied by all producers, and cannot be imported from another city except by extension of the plants. It follows that, if two gas or electric-light or water companies attempt to compete for the trade of a particular locality, a large part of the capital fixed in the rival plants will be needlessly duplicated. One company can supply the entire demand of a city far more cheaply than two can do. The same is true when parallel lines of railroad compete for the traffic between two cities. Between such points one company can give better and cheaper service than two. Whenever competition is tried in these businesses, the rival companies combine sooner or later to form a monopoly. It will be difficult for readers to find cases where effective competition has been maintained *permanently* in the water, or gas, or electric-lighting business. The same is true of the telegraph or telephone business, while parallel railroads have usually been combined. In these natural monopolies, it has generally proved that competition results in economic waste through needless duplication of plants; that competing companies cannot give as cheap

Natural monopolies.
b. **Monopolies due to consumption of products in connection with the plants.**

and satisfactory service as a single company; and that the usual outcome is the formation of a monopoly.

§ 205. During the last twenty years the business world has been startled by the growth of giant monopolies in many industries that do not apparently fall under any of the classes of undertakings previously described. There is hardly an important industry in which attempts have not been made to establish combinations.[1]

4. Capitalistic monopolies.

The *simplest* attempts to form monopolies consist of agreements between a number of producers to limit the product, to maintain fixed prices, or to appoint common selling-agents. These agreements are seldom lived up to, and mutual suspicion among the members generally breaks them up. Yet a "friendly agreement" between four large beef packers in Chicago has sufficed to build up a practical monopoly of the cattle and meat business of the United States. In other cases, where the number of parties to the agreement has been small, this form of combination has created virtual monopolies. A *second* and more formal organization is the "pool." This is established by a formal agreement to maintain prices, in which the parties agree to divide the territory, to divide the business, or to divide the earnings. Pools have been common in the railroad business, but have existed elsewhere, as in cases where nominally competing gas com-

Forms of organization. Agreements, pools, and trusts.

[1] See VON HALLE, "Trusts," 328–337; LLOYD, "Wealth against Commonwealth," Appendix, — for partial lists giving about four hundred attempts to form monopolies.

panies agree to serve separate districts in a city, and not to encroach upon each other's territory. Pools have often enough been broken up by the mutual distrust of the members; for, if one party to the pooling agreement break it while the others keep their promises, he may make large profits. This difficulty is intensified in this country because the courts have refused to enforce pooling contracts, regarding them as in restraint of trade and opposed to public policy. In a *third form* of combination, the trust, monopolists finally secured permanent understanding and union of interests among all members. Trusts were formed by having competing corporations place a majority of all their stock in the hands of a board of trustees. These trustees managed the business of the several corporations, and secured harmony of action. The original stockholders received trust certificates in exchange for their stock, and received dividends proportionate to the certificates. The Standard Oil Trust, formed in 1882, was the earliest and most successful trust. Courts finally decided that corporations had no right to surrender their stock to trustees, such action being *ultra vires*. Between 1888 and 1892 many states passed "anti-trust laws," and Congress placed such an act upon the statutes of the United States. This hostility of the courts and of public opinion led to a formal dissolution of trusts. But dissolution meant simply a change of form. In some cases, one large corporation bought out the smaller corporations composing the trust. In others, a few large corporations were formed, in each of which the original monopolists owned

a majority of the stock. The Standard Oil Combination now operates in this form.

The formation of monopolies in nearly all industries has been attributed to the influence of modern capitalistic production; hence the name *capitalistic* monopolies. The striking facts of modern business are the growth of large capitals and the concentration of production (§ 100 to § 103). It is alleged that the formation of monopolies in industries where large fixed capitals are required is the natural result of the forces that have led to the replacement of small establishments by large enterprises.

Nature of capitalistic monopolies.

III. General Considerations Concerning Modern Monopolies.

§ 206. Combinations of various sorts, enjoying partial or nearly complete monopolies, are attempting to control the national markets for sugar, matches, starch, beef, flour, alcohol, tobacco, crackers, coal, petroleum, cotton-seed oil, linseed oil, glass, paper, rubber, leather, steel rails, wire nails, tacks, shovels, chains, anthracite coal, and other products; while local monopolies exist in many other industries. In the field of the natural monopolies there are telegraph, telephone, and express monopolies, organized on a national scale; while the gas, street railway, water supply, and electric-lighting industries are given up to local monopolies or operated as municipal enterprises. The consolidation of railways is rapidly throwing the control of the national highways into the hands of a few

Extent of monopoly influence.

great railroad systems. We must realize, therefore, that monopoly is one of the common facts of modern business, and that its influence for good or for bad reaches into nearly all branches of economic activity.

§ 207. Most of these combinations possess several of the elements that produce monopolies. The Standard Oil Combination claims to have valuable patents that have cheapened and improved its products, and possesses elements that make it a legal monopoly. Also it claims to have realized all the economies that come from production on a large scale, and so would be considered a capitalistic monopoly. Again, it has been greatly aided by its exclusive control of the pipe lines that conduct oil from the oil fields. Since the oil fields are limited natural agents, the possession of the pipe lines introduces elements of natural monopoly. These features are common to most monopolies.

Complexity of these monopolies.

§ 208. Many natural monopolies have been given exclusive franchises that make them legal monopolies as well as natural. It has been denied that the other combinations are monopolies, since they do not possess any legal grants of exclusive privileges. But such a denial rests upon a narrow definition that confines monopoly to the meaning of a legal monopoly. Even then, a patent right would be admitted to be a monopoly privilege; and most combinations are intrenched behind patents. But the real test of a monopoly is the power to control the supply, and this originates in other causes besides exclusive legal grants.

Denials of the existence of monopolies.

§ 209. An absolute monopoly, or absolute control of supply and prices, seldom or never exists. The power of the monopolist is limited, first, by the fact that it is often possible for consumers to find substitutes for the monopolized commodity. The possibility of using oil limits the power of the gas monopoly, and the alternative of using other foods would limit the power of a flour monopoly. If the article monopolized is not a necessary, people might cease to use it at all, and thus an increased price might be unprofitable. Finally, every monopoly is threatened constantly by investments of new capital in the business which it controls. As prices are raised, inducements for outsiders to invest capital are increased. It often pays better to keep prices from becoming so high as to tempt outside capitalists.

Absolute monopoly impossible in most cases.

IV. The Problem of Natural Monopolies.

§ 210. Disinterested writers practically agree that permanent competition is impossible in industries that are natural monopolies. The reasons have been made clear, and it remains to refer to the public policy that should be pursued in respect to these undertakings.

Impossibility of competition in natural monopolies.

§ 211. Persons interested in water, gas, street railway, electric lighting, and railroad companies sometimes urge that private ownership generally works well, and is the best policy for the future; that the law should leave private companies alone, since it is for the interest of the owners of such property

Private ownership and public control.

to give the best service at reasonable prices. But the public has found that these industries usually become monopolies, and that there have been many abuses in their management. Such enterprises prove very profitable in the long run, and become more valuable with every increase of population and public wealth. Experience shows that private companies usually keep rates at the point that yields the highest net returns, and conceal the large profits by means of stock watering. Now, such monopolies depend upon franchises secured from the public, and people are inclined to hold that companies receiving valuable privileges should not exact monopoly prices and realize enormous profits at the expense of the public that confers the right to use streets, to lay pipes, etc. Municipalities have begun to regulate natural monopolies. The present tendency is to require reasonable prices and good service, to prevent stock watering and the concealment of profits, and to oblige private corporations to pay for valuable franchises. This tendency is of recent development, and too often valuable franchises have been given away to private companies that have oppressed the public.

The policy of public ownership.

§ 212. Many authorities favor public ownership of natural monopolies. Such writers call attention to the notorious corruption of city and state officials by private corporations desiring to secure franchises. They demonstrate that enormous wastes have occurred through allowing rival companies to duplicate business plants, and that usually the competing companies have consolidated and formed

monopolies. They show that the monopoly prices charged by private companies are often excessive, and form a public burden. Therefore, they hold that sound policy requires that we should recognize competition to be impossible in these industries; that municipalities should assume ownership of these enterprises as fast as possible; and that such a policy would diminish the political corruption that threatens the governments of all the municipalities of the country.

To this the advocates of private ownership object that public ownership is socialistic; that city governments cannot manage business enterprises successfully; and that poor and expensive service would result. The charge that municipal ownership is socialistic is as true as the charge that municipal ownership of streets, parks, and sewers is socialistic. The public cares nothing about the name used to characterize municipal ownership, but will consider the results. Many cities own water works, parks, public libraries, and many other institutions that are socialistic; and find such a policy beneficial. The second charge is important. Under inefficient methods that often prevail in our city, state, and national governments, public ownership would prove less efficient than private ownership *at its best.* Yet there is no need of municipal management proving inefficient if people seriously desire to secure efficient municipal governments.

Arguments in favor of private ownership.

Many European cities manage successfully local monopolies. In this country hundreds of municipalities own

their water works, and manifest a desire to extend public ownership. Gas works are owned by a few cities, while municipal ownership of electric-lighting plants is more common. The results of public ownership of gas and electric-lighting plants have been that some undertakings have been very successful, others have proved fairly satisfactory, as much so as average private ownership, while some have been poorly conducted. Success or failure has usually depended upon local conditions, generally upon the possibility of securing honest local government. In cities where municipal officials are allowed to plunder the public, it is probable that municipal ownership would prove less successful. It has been demonstrated that natural monopolies are usually enormously profitable when private companies are allowed to fix rates, while municipal ownership furnishes lighting facilities at lower prices than private companies usually charge. Little has been done in the direction of public operation of street railways in this country. Advocates of public ownership hold that at present it may be advisable for municipalities merely to limit franchises for street railroads to periods of twenty or thirty years, and to make private companies pay a fair return for the privileges granted them, or reduce fares to about a three-cent basis. Large cities could undoubtedly pay a large part of their expenses out of the receipts from public franchises, or could insist upon material reductions in the prices charged by natural monopolies.[1]

Experiments with municipal ownership.

[1] For the experience of municipalities with the ownership of such monopolies, see: SHAW, Municipal Government in Great Britain, Muni-

Steam railroads are natural monopolies, since they enjoy monopolies of location, and since their services must be used in connection with their plants. Competition is possible only at competing points reached by more than one line of road. But railroads possess also the characteristics of capitalistic monopolies since they require heavy investments of fixed capital, and therefore make it possible to effect savings by combining small roads. Public ownership of railroads presents many more difficulties than municipal ownership of local monopolies. But experience shows that private ownership results in serious evils. The chief of these have been, dishonest management by a ring of speculators, stock watering and overcapitalization so great as to make it impossible for many roads ever to pay interest and dividends on their excessive capitalization, and discriminations in rates that have ruined individuals and localities in the interest of favored shippers or localities. Realizing these evils, the public has insisted that the states and the national government shall exercise control over the transportation business. This control has constantly increased, and is certain to be enlarged in the future. Apparently, the people of the United States intend to try all other methods of public control of the national highways before attempting national ownership.

The case of steam railroads.

cipal Government in Continental Europe; ROSEWATER, Cost Statistics of Public Electric Lighting; BEMIS, Municipal Ownership of Gas in the United States; JAMES, Relation of the Modern Municipality to the Gas Supply; Review of Reviews, vii. 61–70.

V. Capitalistic Monopolies.

§ 213. Capitalistic monopolies are so numerous and powerful that they must be considered a common feature of the economic life of to-day. Different reasons have been assigned for their growth, and we must consider the explanations advanced.

Reasons for the growth of capitalistic monopolies.

§ 214. It is said that modern competition has become fiercer than ever before. The growth of large capitals narrows the competing parties down to a few large competitors. Enormous sums are spent in advertising and selling goods, so that competition produces great wastes in effecting sales. A union of competing firms saves these expenses, and enables goods to be sold at lower prices. Competition does not mean lower prices, for the wastes incurred under it oblige prices to be kept at a higher level. Furthermore, competition between large enterprises often becomes commercial warfare. Competing firms sell goods for less than cost in order to crush out competition and to extend their markets. This cut-throat competition sometimes lasts for months or even years. In the end smaller concerns are forced to the wall, and the large companies remaining combine their forces in order to prevent ruinous competition in the future. Undoubtedly the desire to stop these enormous losses has led to the formation of many combinations. Finally, whenever large fixed capitals are invested in a business, it is difficult for independent establishments to reduce

The wastes and injurious effects of competition.

their outputs whenever the supply becomes so great as to lower prices below the point where they cover expenses of production (§ 127). Such conditions favor the formation of combinations, which can reduce the output of each establishment, and restore paying prices.

§ 215. A second explanation of monopolies is that a combination can secure all the economies that come from production on a large scale. Some of the greatest monopolies claim that they have cheapened the cost of producing commodities. This subject has been discussed elsewhere (§ 100 – § 103). Experience proves that large-scale production does lead to more economical production; but it has not yet proved that a complete monopoly can secure many material advantages in production over independent enterprises large enough to secure full efficiency of plant. Some of the great combinations have effected economies in production.[1] Yet, independent establishments compete with the largest monopolies so effectively that they are crushed only by foul means. We have not enough data at present to enable a final decision to be formed on this question. Whenever the great combinations shall be able to make a profit from selling at prices so low as to make it impossible for independent producers to compete on equal terms, then all will have to admit that monopo-

Economies in production.

[1] Monopolies may combine their patents, so that every process is performed with the most approved appliances. Yet large independent enterprises may at any moment secure new inventions. Monopolies may buy their raw materials somewhat cheaper, since they can order very large quantities at a time. The student will find these questions discussed in the works referred to at the end of the chapter.

lies possess greater advantages in the mere work of production. Manifestly, however, the possession of superior facilities cannot be proven by the fact that monopolies crush independent producers by selling at a loss until the smaller competitors are ruined. It must be admitted that the day of production on a small scale is past. But the question is concerning the greater economy of monopolies over independent large-scale production.

§ 216. The growth of the greatest capitalistic monopolies has been aided by alliances with natural monopolies, especially with railroads. The Standard Oil Combination has always had the aid of railroads in crushing competitors. Independent refiners were charged higher freight rates at first, and the excess over the normal rates was paid to the Standard Oil Combination. This was exposed, and the contracts with the railroads were *ostensibly* canceled. But a continuous line of evidence, extending to the very month in which this is written, shows that the oil monopoly has always received assistance from the railroads. So with the dressed-meat combination. A Congressional investigation showed, in 1888, that freight rates west of Chicago encouraged shipments of cattle to that city. After reaching Chicago, the trunk-line association refused to haul cars of private shippers to New York, so that the cattle had to be unloaded at the stock yards controlled by the four great packing houses. Then the meat combination received a mileage allowance of nearly $200 per annum on each car used in shipping their products to the East. Finally, some of

Alliances of capitalistic with natural monopolies.

the railroads refused to carry cattle for local butchers who would not sell the dressed beef of the great combination. These are by no means exceptional instances, and they show how alliances with natural monopolies have served to build up combinations.

§ 217. The opponents of a protective tariff have declared that trusts in the United States have been due to the exclusion of foreign competition by our tariff. The formation of a monopoly is easier when the possibility of foreign competition is excluded; and it is possible to show that some combinations have profited in this way. But the underlying causes of monopolies reach deeper than the tariff, which has been merely one circumstance that may have favored their growth.

Relation of monopolies to the protective tariff.

§ 218. Much of the opposition to monopolies has been due to their unscrupulous and criminal methods of crushing competitors, and securing privileges from the government. Some of them have conspired with railroads to prevent competitors from using the national highways on equal terms. Some have hired agents to destroy the property of their rivals. Some have corrupted city officials, state legislatures, and courts for the purpose of accomplishing their ends; and their sinister influence has been felt repeatedly in Congress. Furthermore, the stocks and bonds issued by the corporations composing some monopolies have been "listed" upon the stock exchanges. In many such cases, the managers of the combinations have indulged in the very worst practices known to the

Evil methods of some monopolies.

exchanges, in order to make money by manipulation of the stock market. Managers frequently have gambled in their stocks to the extent of neglecting the real interest of their companies, and have caused infinite demoralization in the legitimate work of the exchanges. Many honorable men have been connected with combinations, and it must be distinctly stated that the charges above enumerated cannot be brought against all monopolists. But the evil practices[1] of many of the largest monopolies have been so flagrant that honest men find it difficult to form deliberate and impartial judgments concerning the economic aspects of combinations. But the student of economics *must* put aside all prejudices, however natural and justifiable; and must consider, coolly and impartially, the purely economic advantages or weaknesses of monopolies.

VI. Final Considerations Concerning Monopolies.

§ 219. While it is impossible to forecast the future with accuracy, it is possible to emphasize certain facts concerning our experience with capitalistic monopolies up to the present moment. It is certain that most attempts in this direction have failed. The unsuccessful monopolistic enterprises have outnumbered the successful, while the latter have constantly been confronted with

Capitalistic monopolies have not had absolute control.

[1] Readers will find in the Congressional and state investigations of trusts, cited at the end of this chapter, an enormous amount of evidence relating to these abuses. Every good citizen should read H. D. Lloyd, "Wealth against Commonwealth," for an account, supported by detailed evidence, of the criminal methods of some monopolies.

new independent enterprises. Only in a minority of instances have combinations acquired an effective control of prices, while they have never been able to drive all independents out of business.

This has been due largely to the pressure of new capital seeking for investment. This is a mighty force in the United States. A monopoly must not only control a majority of the supply at the time it is formed, but must deal with dozens of future competitors. Whenever prices have been maintained by a combination at an unusually profitable level, new capital has invariably flowed into that business. Many of these new enterprises are established with the purpose of forcing the monopoly to buy them up at good prices. Others find it profitable to sell their products at the high prices established by the monopoly, but are likely to join the combination in the end. Many of the attempted monopolies have aimed solely to limit the supply and to raise prices. Such have fallen under attacks from new competitors attracted by excessive prices.

The pressure of capital for investment.

§ 220. The successful combinations have been those that endeavor to effect savings in producing and marketing their products, and to sell at prices that offer less inducement for attacks by outside capital. The Standard Oil and the Sugar Refining Combinations have reduced the prices to consumers, and exhibit statistics to prove this. The student needs to remember, however, that the prices of all commodities have fallen during the last twenty years, and that the

Monopolies and prices.

charges for refining oil and sugar have decreased very slightly since the formation of these monopolies. On the whole, combinations have prevented their products from falling in price as fast as the great mass of commodities. They sell at monopoly prices, that is, prices that yield the largest net returns, except when forced to lower prices in order to meet or prevent competition.

§ 221. Some of the opponents of monopolies declare that they limit production and raise prices through the artificial scarcity which they create. These opponents consider monopolies to be artificial obstructions to competition, which the law should sweep away.

Various views of the future of capitalistic monopolies.

Other writers hold that capitalistic monopolies arise mainly by alliances with natural monopolies. If natural monopolies should be controlled by government so that the rest of the field of industry should be open to all on equal terms, these writers believe that other monopolies could not be maintained.

Capitalistic and natural monopolies.

Other economists take a more favorable view. They admit the abuses that arise from alliances of capitalistic and natural monopolies, but hold that the explanation of the growth of combinations is that they avoid the wastes of competition and secure economies in production. These savings represent a gain to society; and a wise policy will preserve this gain, while minimizing the evils of monopolies.

A more favorable view.

Finally, socialists believe that monopolies are superior forms of organization that are destined to prevail in all

industries. Competition is no longer possible. When all industries fall into the control of giant monopolies, the government will assume the ownership of these combinations. This will mean complete socialism.

The view of socialists.

These conflicting views present the most difficult practical problem that confronts economists. There can be no doubt of the impossibility of competition in natural monopolies. Therefore, the question of the future of capitalistic monopolies raises the entire question *whether competition will be possible in any part of the business world.* This problem is being pushed to the front by every new combination of capital.

Difficulty of the problem.

§ 222. No one denies that a monopoly places immense power in the hands of the monopolist. Capitalistic monopolies have proved objectionable because they lead to gross abuses, and the public has as yet no guarantee that monopolists will not abuse their power in the future. For this reason many people favor the immediate abolition of all such combinations by law.

Guarantees that monopoly power will not be abused.

Other writers hold that combinations offer the most economical organization of production, and that it is unwise and useless to attempt to suppress them. Society has, however, the right to regulate monopolies and to prevent irresponsible abuses of their power. Legal regulations may oblige all combinations to furnish a satisfactory supply of commodities at reasonable prices.

Legal regulation of monopolies.

Again, it is argued that no combination can suppress competition permanently, and prevent it from assuring to society good service at fair prices. A complete monopoly would not destroy the potential competition of new capital at any time when high prices offered a prospect of large profits. In the pressure of capital seeking investment we have a force that will guarantee society from abuses. This argument gains force when one reflects that monopolists constantly seek opportunities to invest their savings. If we conceive of all industry as under the sway of fifty gigantic monopolies, then the earnings of each monopoly would menace every other with competition the moment that prices should be raised unduly. Monopoly earnings must be invested in some enterprise that supplies social wants ; and the pressure of capital for investment might prevent monopolistic abuses. At the present, monopolists are entering each other's fields of industry. One monopolist is investing in match factories, and attacking the match monopoly. The leader of the oil combination is entering the iron and steel industries. It is urged that this pressure of one monopolist upon another will surely increase from year to year.

The persistence of competition.

§ 223. The following conclusions, in the judgment of the author, are all that can be safely affirmed from our present experience of capitalistic monopolies : —

Conclusions as to the growth and nature of capitalistic monopolies.

1. Capitalistic monopolies are usually complex in character and possess various elements that produce monopoly. The Standard Oil

Combination has certain elements of natural monopoly. Patent rights and other elements of legal monopoly are to be found in the majority of modern combinations. Then, alliances with railroads and other natural monopolies have assisted the growth of some of the largest and most powerful capitalistic monopolies in the United States.

2. Looking at the wastes of modern competition, it seems clear that combinations save many expenses, and more easily contract production whenever prices fall. But this does not justify the inference that capitalistic monopolies are inevitable. It merely warrants the conclusion that combination offers *one method* of avoiding the wastes of competition. There may be other methods of ending these wastes. A higher standard of commercial morality, a more moderate business policy, and a development of trade statistics that shall make possible an accurate forecast of the market would change the nature of competition considerably, and would terminate many of its worst features at the present moment. Monopolies are undoubtedly one remedy for the present wastes of competition, but it is altogether premature to conclude that they are going to prove the only remedy available in all future times. And it is not likely that business conditions and methods will undergo any marked change in the immediate future. For this reason we are liable, for some time to come, to see capitalistic combinations resorted to as a means of avoiding the evils of disordered competition.

3. Monopolies may realize some economies in produc-

tion, but they also entail heavy expenses for supervision of their immense interests, while they are likely to incur the wastes to which great corporations are subject (§ 91). The student must remember that we are comparing monopolies with large-scale independent enterprises, not with small-scale production. It is decidedly not proven that the economies in production realized by monopolies are so great as, of themselves, to assure to combinations future control of all markets.

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CHAPTER XII.

INTERNATIONAL TRADE.

I. The Foreign Trade of the United States.

§ 224. The foreign commerce of this country is smaller than the domestic, although it usually receives far greater attention. Yet our commerce with foreign countries is surpassed only by the foreign trade of England, France, and Germany. The following table shows the exports and imports of merchandise of the United States for fiscal years ending June 30 : —

Magnitude of the foreign commerce of the United States.

Year.	Exports.	Imports.	Total.
1892	$1,030,278,148	$827,402,462	$1,857,680,610
1893	847,665,194	866,400,922	1,714,066,116
1894	892,140,572	654,994,622	1,547,135,194
1895	807,538,165	731,969,965	1,539,508,130
1896	882,606,938	779,724,674	1,662,331,612

§ 225. The principal exports from the United States have always been agricultural products. In 1895 these formed nearly seventy per cent of the total, while manufactured goods made up twenty-three per cent. The exports of manufactured products show a gradual increase from year

Character of the export trade.

to year. The most important articles exported in 1895 were as follows: —

Commodity.	Value.	Commodity.	Value.
Raw Cotton	$204,900,000	Unmanufactured Tobacco	$25,798,000
Meat Products	127,001,000	Leather and Manufactures	15,614,000
Wheat and Flour	95,457,000	Manufactures of Copper	14,468,000
Refined Mineral Oils	41,498,000	Manufactures of Cotton	13,789,000
Iron and Steel and Manufactures	32,000,000	Coal	11,098,000
Cattle	30,603,000		
Wood and Wood Manufactures	27,115,000		

Character of our import trade.

§ 226. Of the commodities imported into the United States in 1895 fifty-two per cent came from Europe. The principal imports were: —

Commodities.	Value.	Commodities.	Value.
Coffee	$96,130,000	Manufactures of Various Fibers	$26,290,000
Sugar and Confectionery	76,493,000	Hides and Skins	26,122,000
Chemicals, Dyes, and Medicines	43,567,000	Unmanufactured Wool	25,556,000
Manufactures of Wool	36,543,000	Manufactures of Iron and Steel	23,048,000
Manufactures of Cotton	33,196,000	Unmanufactured Silk	22,626,000
Manufactures of Silk	31,206,000	Crude Rubber and Gutta Percha	18,475,000

Our imports consist mainly of food products and raw materials which we are unable to raise at all, or unable to raise in sufficient quantity. The imports of wholly or partially manufactured goods amount to $200,000,000 or $250,000,000. This is only a small fraction of the product of domestic manufactures.

II. The Nature of International Commerce.

§ 227. Merchants sell commodities in foreign countries, or import goods from abroad, whenever differences between domestic and foreign prices make it profitable to do so. The exporter or the importer sells goods for money, or buys foreign merchandise with money. From this point of view, international trade consists in the exchange of commodities for money.

International trade seems to be an exchange of commodities for money.

§ 228. The shipment of money from one country to another entails considerable expense, so that an elaborate mechanism of credit has been developed to enable international trade to be carried on with as little money as possible. Drafts and bills of exchange serve to pay most international debts, so that money is used merely to pay balances (§ 164). When the exports of a country exceed the imports, then foreign creditors cannot secure enough bills of exchange to pay for their purchases, and money may be sent to settle the balance of indebtedness. An excess of exports over imports is said to create a "favorable balance of trade." When imports exceed exports, money may be sent abroad to pay for the excess, and the balance of trade is said to be "unfavorable."

The mechanism of international payments.

The exports from a country pay for the great bulk of the commodities imported. The statistics of the foreign commerce of the United States show how little money is used in foreign trade:[1]—

Exports pay for imports.

[1] Since 1890, disturbances in our currency have caused exports and imports of gold not strictly due to the condition of international commerce.

Year.	Total Exports and Imports of Commodities.	Total Exports and Imports of Gold and Silver.
1886	$1,314,960,000	$111,057,000
1887	1,408,502,000	96,168,000
1888	1,419,911,000	105,752,000
1889	1,487,533,000	125,604,000
1890	1,647,139,000	86,124,000

§ 229. The foreign exchanges of any country include many other international transactions besides the purchase or sale of merchandise. The following transactions give rise to international indebtedness : [1] —

The foreign exchanges.

1. Investment of capital in foreign countries. This gives rise at first to a debt owed by the country whose citizens make the investment. Then it causes an annual debt owed to foreign capitalists by citizens of the country where the capital is invested. At least $2,000,000,000 of foreign capital is invested in the United States, and this amount is increased in prosperous years. Thus the United States owes about $90,000,000 annually for interest on foreign capital.

2. English ships do a large part of the ocean carrying trade of the world, and receive payments for freightage. Of the foreign trade of the United States only about twelve per cent has been carried in American vessels in recent years, so that we have owed a balance of freight charges to foreigners. The inward freight

[1] For a full account of such transactions, see GOSCHEN, "The Foreign Exchanges." Space permits merely a mention of the most important here.

charges paid to foreign ship owners are estimated at about $25,000,000 annually.

3. Citizens who travel in foreign countries incur indebtedness there. Americans spend about $47,000,000 in foreign travel each year. This figure greatly exceeds the expenditures made by foreign travelers in this country; so that we owe abroad many million dollars annually for the excess.

4. London serves as a world's clearing house for the settlement of international debts. The charges made for such services create debts owed by all nations to London bankers.

As a result of all such international obligations, England is the creditor of many nations each year for freight charges earned by English ships, for interest on several billion dollars of capital invested in various countries, and for commissions, etc., of London bankers. As a result, she is able to import merchandise that vastly exceeds her exports, and does not have to pay for the "unfavorable balance of trade" by shipping gold to other countries. The United States, however, owes about $150,000,000 annually to foreign creditors for the various items enumerated. Consequently our exports of merchandise may exceed our imports largely without making it necessary for foreign buyers to ship gold to this country. In prosperous years, however, it is probable that foreigners constantly invest capital here; so that the volume of our indebtedness is decreased.

Comparative positions of England and the United States.

§ 230. In a majority of cases international payments

for all forms of indebtedness are made indirectly through London. Tea imported from China, or silks imported from France, into the United States may be paid for by bills of exchange drawn by American creditors against exports of wheat or cotton sold to English merchants.

Indirect settlement of international debts.

§ 231. Money is shipped from one country to another when needed to settle a balance of indebtedness for imports of merchandise, for freight charges, for interest on foreign investments, for travelers' expenses, etc. Many errors are made by comparing the exports and imports of money with exports and imports of merchandise. Money is needed merely to settle net balances of indebtedness *of all sorts*. The United States has had a considerable surplus of exports of merchandise (a "favorable balance of trade") every year since 1876 with only three exceptions. Yet our imports of gold and silver have exceeded exports in only five years during this period. The explanation is that our other foreign debts plus the debt owed for imports, exceeded usually our exports of merchandise and the other debts owed us by foreigners. On the other hand, Great Britain has each year an enormous excess of imports over exports of merchandise, but this "unfavorable balance of trade" is not paid by exports of money. It comes as payment for other debts owed by citizens of foreign countries.

International movements of money.

Eliminating all disturbances originating in the money supply, and supposing that a country has a sound currency, then imports or exports of money will be regu-

lated automatically. Suppose money to flow into the United States in settlement of a net indebtedness of foreigners. Continued imports of money will raise prices here, and tend to lower them in the countries whence the money comes. The rise of prices will make this a good market to sell in and a bad market to buy in. Thus imports will increase and exports decrease, until our increasing imports create a debt to foreigners that will balance the debts that caused shipments of money. When imports of merchandise increase to this extent, the inflow of money will cease. Conversely, if money continually leaves the country, prices tend to fall; exports increase and imports decrease. A growing excess of exports of merchandise will finally turn the balance of indebtedness the other way, and check exports of money. A nation that produces as much gold and silver as the United States may export some gold and silver continually, without lowering prices materially.

Automatic limits to exports and imports of money.

The international movements of money are affected by the action of international banking houses. Whenever the rate of interest on call loans or short-time paper is very low in London, for instance, these banking houses are likely to ship part of their reserve of money to New York, or Berlin, or Paris, in order to take advantage of higher rates of interest in those cities.

The action of banking houses.

§ 232. It was thought formerly that foreign trade was beneficial when it led to an excess of exports over

imports, and hence to imports of the precious metals. This idea has been abandoned by economists since it has been seen that a continued importation of money merely tends to raise prices and to check itself. A country cannot sell to other countries unless it also buys. This year it may be possible to check imports and to stimulate exports. But next year or the following year continued importations of gold will raise prices, make it more difficult to sell in foreign countries, and make it easier for foreigners to sell commodities here. The real advantages of foreign commerce are: —

The advantages of international trade.

1. It enables a country to procure commodities that cannot be produced at home.

2. It enables a country to produce those products for which it has the greatest advantages, and to exchange them for products which cannot be produced as cheaply.

III. International Values

§ 233. International trade is profoundly influenced by the fact that capital and labor do not move from one country to another as readily as between different localities in the same country. Distance, language, religion, political institutions, and customs all tend to hinder international movements of labor and capital. Undoubtedly some of these causes impede the movement of labor and capital within such a vast country as the United States. In so far as this is true, trade between the Atlantic and Pacific coasts, for instance, resembles international trade

Imperfect mobility of labor and capital.

in this particular. Modern conditions favor the movement of labor and capital between different countries, yet this immobility still exists.

Result of this immobility of labor and capital.

Within any area where labor and capital are practically free to move where they desire, all commodities will be produced in those places where the absolute advantages for producing them are greatest. The localities that offer the greatest advantages will become the exclusive seats of production of each commodity. These advantages include all elements that tend to make the social cost of production low, and include the important element of accessibility to the market. The products of such an area will tend to have a value proportioned to the marginal expense of producing them. On the other hand, between two countries, all labor and capital will not flow to the places in either country where the absolute advantages for production are greatest. Each country will invest its labor and capital so as to make the best of the advantages which it has. Only the surplus labor and capital of older nations seek investment in other countries where the natural opportunities for investment are not so fully utilized and developed. It follows that a bushel of wheat may be produced in one country with twice the expenditure of labor and capital required to produce a yard of cotton cloth; while, in a second country, the two commodities may be produced at exactly the same social cost. This would be impossible if labor and capital moved freely from one country to another.

§ 234. Money tends to move to countries where its general purchasing power is greatest, and so to reduce the general purchasing power of an ounce of gold to the same level in all places (§§ 173–176). But this does not mean that the power of money to buy wheat or cloth or steel is the same in all countries. Within each country the prices of individual commodities will be proportional to the marginal expense of producing them. This may give different relative prices for individual commodities in every country.

International movements of money tend to equalize general prices.

§ 235. The manner in which relative prices vary in different countries may be illustrated by the following table of assumed prices for various commodities in two countries, say England and the United States: —

Differences of relative prices.

Commodities.	Prices in England.	Prices in United States.
One ton steel rails . .	$14.00	$20.00
One pound wool . . .	.15	.20
One yard carpet . . .	1.20	2.00
One yard cotton cloth	.12	.15
One bushel wheat . .	.90	.60
One bushel corn . .	.70	.50
One pound leather . .	.20	.15
One pound pork . .	.15	.07

We assume the first four commodities to have a smaller money cost in England, and the last four to be cheaper in the United States. But the power of a dollar to command the entire group of commodities in the quantity usually consumed, might be about the same

in both countries. Finally, this table of prices would tell us nothing concerning the absolute social costs of producing any one of these commodities in the two countries. Less units of labor and capital might be required to produce a ton of steel rails in the United States than in England. But if the money cost of labor and capital is much less in England, the money price of steel rails might be less in that country. Labor and capital do not flow from one to the other freely enough to insure to each unit of the two factors of production the same money returns in both countries.

International trade based upon differences in relative prices.

§ 236. Now, an American exporter of wheat will send wheat to England whenever the difference in the prices of wheat is sufficient to pay the cost of transportation and leave a profit on the transaction. Similarly, American importers will examine the English prices of steel rails, carpets, and cotton cloth; and will import them if they can pay transportation charges and yet make a profit by selling at American prices. Now, it might seem that, under the circumstances assumed, England would supply the United States with all the rails, wool, carpets, and cotton cloth consumed here; and that the United States would furnish England with all her supply of wheat, corn, leather, and pork. But this would not be the case.

Suppose England to begin to export to the United States the four commodities of which the English prices are lower, and the United States to export to England the four commodities of which the American prices

are lower. Such a trade could continue until one country had an excess of exports and the other had an excess of imports. Exports and imports would not balance each other permanently. Suppose the United States sends to England money to pay for an excess of imports. As this exportation of money continues, prices begin to rise in England and to fall in the United States. Suppose the change of prices to be twenty per cent. Then we should have an altered scale of prices as follows:—

Actual course of trade between the two countries.

Commodities.	English prices.	American prices.
Steel rails . .	$16.80	$16.00
Wool . . .	.18	.16
Carpet . . .	1.44	1.60
Cotton cloth .	.144	.12
Wheat . . .	1.08	.48
Corn	.84	.40
Leather . .	.24	.12
Pork . . .	.18	.056

Evidently the changed prices have made it impossible for English merchants to sell anything but carpets in the United States; while American merchants can export increased quantities of wheat, corn, leather, and pork, and might even begin to export wool and cotton cloth to England. This change in the course of trade would finally oblige England to ship money to the United States to pay for an excess of imports. This money would raise prices in America while English prices would fall, until some American exports would be shut off and some English exports would increase.

From this illustration we draw the following conclusions, which are valid explanations of the characteristics of international trade: —

Conclusions.

1. Shipments of money in payment of balances of indebtedness constantly cause changes in prices, and check exports in the country receiving the money, while increasing exports in the country that makes the shipments.

2. Changes in prices caused in this manner cut off the exports of those commodities in which there is the smallest difference between domestic and foreign prices.

3. Those commodities in which there is the greatest difference between domestic and foreign prices will be continuously exported in spite of changes in prices.

4. The normal result will be, in the long run, that each country exports mainly those commodities that show the greatest difference between domestic and foreign prices. Exports of other goods can be merely intermittent. Now, those commodities that can be produced at the greatest advantage in price over foreign producers are the ones for the production of which the country offers the best advantages *at the time being*. Other commodities are produced at a less advantage as compared with foreign producers, precisely because labor and capital are less efficient in producing them. To apply this principle practically, we may say that the wheat, cotton, meats, oils, iron and steel, cattle, wood, tobacco, leather, copper, and manufactured cottons that form the principal exports from the United States at the present time are the commodities which our merchants

can sell in the markets of the world at the greatest advantage over foreign producers. The coffee, sugar, wool, hardware, cotton and woolen manufactures, and the silk that we import are goods for whose production our advantages are not so great. We might produce all our woolen and cotton goods in this country, instead of importing a part of them as at present. But our capital and labor can do other things more advantageously, and so flow naturally into the production of those commodities for which we have unparalleled advantages.

§ 237. Movements of money from one country to another tend to make exports and imports of commodities equal in the long run. When other international obligations make a country a debtor to foreign nations, exports may exceed imports by the amount of this debt. Conversely, when a country has foreign debtors, imports may exceed exports proportionately.

The determination of values in international exchange.

A country's exports represent the demand of other countries for her products, while the imports represent her demand for the products of foreign countries. The course of business tends constantly to equalize a country's demand for foreign products and the foreign demand for her own products, through changes in prices caused by shipments of money. An increased demand for foreign products, causing an excess of imports, will start shipments of money to foreign countries, and lower domestic prices. Exports will increase on this lower level of prices until they equal imports again. An increased

Equalization of international demand.

demand for foreign products tends to lower the prices of exports; that is, it tends to render less favorable the terms on which foreign products are paid for. Conversely, an increased foreign demand for a nation's products tends to produce an excess of exports, and shipments of gold from foreign countries. This lowers prices in foreign countries so that they can pay for the larger quantity of goods demanded by exporting more goods on the lower level of prices. Foreign trade is more or less profitable to a nation in proportion as its demand for foreign products is less strong than the foreign demand for its products.

A country that exports principally raw materials will have to incur heavier expenses for freightage than a country whose exports consist mainly of manufactured goods. These heavier freight charges for raw materials raise the prices that must be asked in foreign countries; hence, tend to decrease the demand for the products of the country that exports raw materials. Freight charges on manufactured goods affect prices less, and tend less to decrease the foreign demand.

The burden of freight charges.

IV. Restriction of International Trade.

§ 238. International trade is restricted to a greater or less degree by imposing customs duties upon goods that cross the borders of any country. Duties imposed upon goods leaving a country are called export duties, and are not very common at the present day. But goods brought into a country

Customs taxes or duties.

are often taxed by import duties. Import taxes are specific or *ad valorem* according as they are assessed proportionately to the bulk of the commodities or to the value.

§ 239. Sometimes import duties or tariffs are imposed solely to secure revenue for the government. When laid for the sole purpose of revenue, the duties are made high enough to secure the maximum revenue, but not so high as to discourage importation more than is inevitable. The English revenue tariff aims, as far as possible, to tax only commodities that do not come into competition with products of home industries. This is done with a view to interfering as little as possible with business conditions. Such a revenue tariff will normally raise the price of the articles taxed by about the amount of the duties. Importers who bring tea into England pay the government about $17,000,000 annually in customs duties, and then increase proportionally the prices charged for the goods. Indeed, the increase will usually be rather more than this, since, in order to pay duties, importers must have larger capitals invested in the business; and the interest on these increased capitals must also be paid by consumers.

A revenue tariff.

When duties, laid for the main purpose of raising revenue, are imposed upon imported commodities that do compete with products of domestic industry, a customs tariff gives "incidental protection" to domestic producers. Merchants cannot import competing foreign products with-

Revenue tariff with incidental protection.

out having to pay the customs tax besides the price paid the foreign producer. Thus imported articles can be sold only at higher prices than formerly, and domestic producers may profit by increased prices of competing foreign products. The earliest tariffs imposed in the United States were revenue tariffs that purposely gave to domestic producers "incidental protection."

Protective tariffs.

§ 240. The restriction of foreign commerce that followed the embargo in 1807, and then the War of 1812, cut off most imports until the year 1815. This removal of foreign competition led to a rapid growth of textile manufactures. Many of these textile establishments were poorly conducted, and when foreign competition began again in 1815, there arose a demand for more highly protective duties. In 1816 customs duties were raised, particularly upon cottons and woolens; and the tariff became a distinctly protective tariff. From that time to the present the tariff laws of the United States have maintained a strong protective character, although from 1846 to 1861 duties were reduced toward a revenue basis. In 1861 the Morrill Tariff Act restored duties to about the level of 1845, but increased the duties on iron and wool. Then ensued the Civil War, in which the United States was obliged to lay its hands upon every source of revenue. In 1862 and 1864 "war tariffs" were passed imposing duties upon every possible import, and raising the rates. Moreover, very heavy internal taxes had been placed upon most important domestic manufactures; and for this reason "compensatory" increases of duties were

placed upon imports.[1] After the Civil War the expenses of the government decreased, and a reduction of taxes began. Most of the internal taxes were repealed, but the war tariff was not lowered. Even the heavy "compensatory" duties on imports were retained after the repeal of the internal taxes that had caused them to be imposed. In 1867 a moderate reduction of duties was voted by the Senate, and received a majority vote in the House, but failed to pass the latter body because a two thirds vote necessary to suspend the rules could not be secured. For nearly twenty years the war tariff of 1864 remained unchanged in important particulars. In 1883 some duties were lowered, but others were raised, and the general character of the tariff remained the same. In 1890 the McKinley tariff removed revenue duties on raw sugar and some other articles, but increased, on the whole, the protective duties on articles that competed with domestic products. Finally, in 1894 the Wilson tariff placed wool, copper, and lumber upon the free list; re-imposed a revenue duty upon raw sugar; and reduced irregularly the duties upon protected commodities. The present law, however, is distinctly a protective measure, and imposes upon most competing foreign products protective duties which averaged nearly

[1] The internal taxes raised the prices of nearly all domestic products. This increased the expenses of the protected manufacturers for nearly everything that entered into their products, and placed them at just so much of a disadvantage in competition with foreign producers. The "compensatory" duties levied on foreign products were intended to handicap the foreign producer as greatly as the internal taxes hindered the domestic manufacturer.

forty-two per cent in 1895, and more than forty per cent in 1896.

§ 241. The general effect of a protective duty has been stated by a leading protectionist journal in such a clear manner as to command the entire assent of one of the leading free-traders of the United States: "A protective duty . . . has for its object to effect the diversion of a part of the capital and labor of the people out of the channels in which it would run otherwise into channels created or favored by law."[1] Before considering what is involved in thus diverting capital from one industry to another, the student must be reminded that there is often a difference between the immediate and the permanent results of economic causes. Both need to be considered, but it is easy to lose sight of the things that hold true in the long run.

The general effect of a protective duty.

§ 242. The immediate effect of levying a protective duty (say of fifty per cent) upon a foreign product is to increase by that amount the expense of importing the commodity. This normally increases the price at which the foreign product must be sold. If the foreign product formerly sold at one dollar, the protective duty will regularly raise its price to about one dollar and a half. This increased price is intended to induce domestic capital to enter this industry. Manifestly if domestic producers, before the duty was imposed, could have made a fair average profit from manufacturing

Detailed effects of a protective duty.
I. Induces the establishment of a particular industry.

[1] From Philadelphia American. See SUMNER, Protectionism, 16, 17.

and selling the commodity at one dollar, no duty would have been needed to insure the investment of capital in this industry. The prospect of securing more than one dollar for the commodity may make it profitable for capitalists to undertake to produce it at home.

The establishment of such a "protected industry" adds nothing to the total amount of labor and capital permanently invested in the country. It merely diverts capital and labor from old industries or from the establishment of other new industries that would have been profitable without protection. A slight exception to this principle occurs when a protective duty invites foreign capital *which would not have come to the country otherwise.* But the amount of foreign capital brought to the United States by the tariff has never been more than a very small per cent of the new capital invested in industry each year.

2. Does not add to the total industry of the country.

The immediate effect of establishing, by a protective duty, an industry that would not have been profitable otherwise, is to attract into a less productive industry capital that would have been invested in more productive channels. What is it that makes it possible for some American producers of wheat, corn, cattle, iron and steel products, cotton and cotton goods, leather, boots and shoes, tobacco, and oils to sell their products in foreign countries at prices that enable them to compete with any producers in the world, while other American producers cannot do so? Simply the fact that the first

3. Establishes immediately less productive industries in place of more productive.

class of producers enjoys exceptional facilities. A protective duty upon articles that we cannot as yet produce as cheaply as certain foreign producers, simply invites capital away from industries where we have unparalleled advantages into industries where our facilities are not so good. Its immediate effect, therefore, must be to decrease the productivity of the capital invested in the protected industry, and to cause economic loss.

4. May exercise a different permanent effect.

But it may happen that the industry established by the protective duty will prove to be one for which our producers have first-rate facilities. Inexperience or other initial difficulties may have been the only causes that prevented capitalists from making a profit by producing the product at the price of one dollar. It may happen that, in a few years, the domestic producers can overcome these difficulties, and make a profit by selling the commodity at as low a price as the foreign producers. When this occurred, the industry would prove self-sustaining if the duty were removed; and it would become a more profitable instead of a less profitable industry. Then the economic loss would cease, and the ultimate result of the protective duty would have been to *hasten* the establishment of the industry. The word *hasten* is italicized because such an industry would be one for which the country had good advantages,— one which would have been quite sure to be established without protection, as the labor and capital force of the country increased. Protective duties may hasten the growth of such enterprises; but the economist must insist that they cause

a less productive use of capital, hence an economic waste, until the industry becomes self-supporting. Then the duty should be removed, and the economic waste would cease.

5. May fail to establish self-sustaining industries.

It is possible that experience under a protective duty may show that the protected industry does not enjoy such great advantages that producers can afford to sell at the prices charged by foreigners (in this assumed case, one dollar). This is merely a demonstration that the industry does not enjoy such superiority over foreign producers as other industries of the country possess. A protected industry that does not become self-supporting causes a permanent economic waste. The labor and capital invested in it could have been employed more profitably in some other industry. The disadvantage of the domestic producer over the foreigner may not be as great as the duty of fifty per cent imposed upon the foreign product. Domestic producers may be able to produce the protected commodity at a price of $1.25. If there is effective competition among producers, the price will be fixed at that figure. Then the protective duty of fifty per cent will have the ultimate effect of raising the price of the commodity only twenty-five per cent. In all cases, protective duties raise the price of the commodity by the increased money expense at which domestic producers turn out the article. If domestic producers could afford to sell the protected commodity as cheaply as the foreign producers, no protective duty would be needed to establish or to maintain the industry. But it has happened that domestic producers in the United States have com-

bined to raise prices behind the barriers of the protective duty. Thus, in the case assumed here, the domestic producers might be able to sell the commodity profitably at a price of $1.25. If they form a combination, they can maintain the price at $1.45 or $1.49, because the duty excludes foreign competition at any price under $1.50. As a matter of fact, a number of important products are regularly sold to foreign customers at prices lower than those charged to American consumers.

6. Effect upon the foreign producer.

All agree that when a revenue duty is imposed upon a foreign product that is not produced by any domestic industry, importers add practically the whole duty to the price charged domestic consumers. The exceptions to this principle are not important enough to require mention here. But there is a dispute as to whether the foreign producer or domestic consumer bears the burden of a protective duty laid on competing foreign products. The principles laid down in the preceding paragraphs enable the question to be answered briefly. A protective duty can be deemed necessary to maintain an industry only so long as domestic producers are unable to produce the commodity as cheaply as foreigners. If foreigners can sell the protected article for one dollar, and domestic producers cannot afford to sell it for less than $1.25, then the price will be $1.25 if the domestic producers are able to supply practically all the domestic demand, and if they do not combine to raise prices to $1.49, the limit set by the fifty-per-cent duty on the foreign product. In such a case domestic consumers bear a burden of twenty-

five cents on each commodity bought. Foreign producers, moreover, will be unable to sell their goods in the domestic market unless they reduce the cost of production or adulterate their products, so that they can sell at $1.25 after paying the duty. If they have other markets, they will cease to sell their products in the country that lays the duty. If they cannot find other markets for all their goods, they will try to cheapen their products in some way or other, or may temporarily sell at a lower margin of profits. It may happen that a part of the burden of a protective tax can be thrown temporarily upon the foreign producers in this manner, but domestic consumers are sure to bear a burden proportioned to the greater money expense at which the domestic product is produced. This burden on consumers ceases only when the domestic money cost of production becomes as low as the foreign cost. But then the protective duty is no longer necessary to maintain the industry. Finally, if the protective duties laid in America may throw part of their burden upon the foreign producers, it is also true that protective duties imposed by France, Germany, and other foreign countries may throw part of their burden upon the American exporter.

7. One protective duty may neutralize the advantages that domestic producers gain from others.

If one or two industries only are given protection, they will profit by the increased prices that can be secured for their products. But if protective duties are extended to many industries, so that the prices of many commodities are increased, then the duties conflict with each other. One industry may be given protec-

tion. Then other protective duties are pretty certain to increase the prices of the materials or products necessary to build and equip the plants used in the first industry. Most American producers pay more for some of the materials and products used in equipping and running their industries than would be necessary without the protective duties. They are placed at just so much of a disadvantage as compared with English producers, who are able to buy all necessary materials in the cheapest markets. This increased expense of establishing and running a business has prevented many American industries from becoming able to compete successfully with foreign producers.

§ 243. The cost of producing a commodity is seldom exactly the same in any two establishments. Within any industry there may be ten or fifty different costs of production. Some establishments barely manage to pay expenses, while others make large profits from selling at the same prices that the first establishments receive. In protected industries some establishments may be self-supporting and able to sell at as low prices as foreign producers can offer, while others would be crushed by foreign competition if the protective duty should be removed. This is true of most of the protected industries at this moment.

Different costs of production.

§ 244. Protective duties can divert capital and labor from one industry to another, but they cannot do many things that they are believed to accomplish.

What protective duties cannot do.

Protective duties do not increase the wealth of the

country, as long as they are needed to maintain protected industries in existence. Until the protected industry becomes able to produce at as low money cost as foreign industries, there is a constant loss. It may happen that a protective duty may *hasten* the establishment of an industry which becomes self-supporting and exceedingly profitable. In such a case the protective duties cause an initial loss that may be counterbalanced by the ultimate gain of creating a very productive, self-sustaining industry earlier than it would have been established otherwise. In other cases, protective duties divert capital from more productive to less productive channels of investment, and cause a distinct loss.

They do not increase wealth.

Protective duties cannot increase permanently the total industry of a country, as we have seen (§ 242). It is sometimes said, for instance, that if we had not imported $31,206,000 of silk goods in 1895, we should have given just so much more employment to domestic labor and capital. But the labor and capital needed to produce those silk imports would merely have been diverted from some other industry in which they would have found investment sooner or later. In such a year as 1895, when uncertainty as to the future of our currency was paralyzing all business, it is probable that we had considerable unemployed labor and capital, some of which might have found investment in the silk industry. But, even in this case, increased protective duties would merely have caused this amount of labor and capital to be invested

They do not increase the total industry of a country.

earlier than otherwise. It would have caused no permanent increase of business. Moreover, these $31,206,000 of silk imports were paid for by an approximately equivalent amount of exports. If a protective tariff cuts off suddenly $31,206,000 of imports, it will not instantly decrease exports; for foreigners will buy and Americans will sell as long as prices make it profitable. But in the long run a decrease of $31,206,000 in imports will cause exports to exceed imports by just that amount from year to year. Foreigners will be unable to pay for this excess of exports by bills of exchange drawn against silk goods sold to Americans, as they used to do. Sooner or later they must pay for the excess in money. The inflow of money will ultimately tend to raise prices and so to cut off the export of goods that are now being exported on a narrow margin of profit. *A country cannot export unless it will also import.* A reduction of imports by protective duties will ultimately lead to a decrease of exports. Finally, protective duties may lead to retaliatory legislation by other countries, as the tariff of 1890 probably did. If foreign countries increase the duties charged on the articles that we sell them, or impose other restrictions, then the decrease in our exports may happen immediately, instead of coming more slowly through changes in prices.

It is said sometimes that we may keep our money at home by discouraging imports of foreign products. It is possible of course to diminish imports by protective duties; and sometimes such action may cause exports to exceed imports, and lead to a net importation of gold.

But such a condition can be merely temporary. The movement of money from country to country is automatic, depending upon comparative prices. If we continually import gold, we tend to raise prices. Higher prices diminish exports. If the first decrease of exports does not stop the excess of exports over imports, then prices will continue to rise until exports fall to the level of our diminished imports. A country will secure from the world's stock of money enough currency to enable its business to be done at the general level of prices that prevails in other countries. Nor can it permanently retain more than this amount.

They do not increase permanently the net amount of money received from foreign countries.

Wages in the United States are somewhat higher than in England. The American wage earner not only receives more *money* than the English worker, but also he secures with his money *a greater amount of commodities*. The important thing is that the American worker receives more food, clothes, shelter, books, etc., than the English laborer, on the whole. Now, it is self-evident that American wages, expressed in terms of commodities, cannot exceed English wages unless there are more commodities produced for the laborer to receive. Real wages, we repeat, cannot be greater in this country, unless our industry, as a whole, is productive of more commodities, of more consumable wealth. Now, a protected industry, until it becomes self-supporting and no longer needs protection, is not as productive as the

They cannot increase the general rate of wages in a country.

unprotected industries which always have been self-sustaining. Consequently, a protective duty lessens production, and decreases by just so much the commodities available for the support of laborer and capitalist alike.[1]

Relation of the tariff to wages in the United States.

§ 245. In this country certain industries have always been phenomenally productive, that is, they have yielded an unusually large product for each unit of invested labor and capital. Money wages in these industries, particularly in agriculture, have always been higher than in Europe.[2] Employers could afford to pay higher wages because the labor was so productive that the money cost of producing each unit of product was small. Now, other employers could not induce laborers to work for them unless their industries were productive enough to enable them to pay wages sufficient to induce men to keep out of agriculture and other self-sustaining industries. The wonderful natural resources of our country, which are unsurpassed; the energy, intelligence, ingenuity, and excellent industrial character of our labor

[1] Of course this presupposes that the share or proportion of the total product that goes to the laborers is not affected permanently by the protective duty. It would hardly be claimed seriously that such is not the case, and that the tariff *permanently* enlarges the share of the laborers in the total product. Least of all could this be true of the United States, where interest and profits are generally higher than in most European countries. Neither would any one claim that manufacturers who favor protection do so because protective duties increase the proportion of the product paid to laborers, and decrease the proportion received by the employers.

[2] Evidence on this point runs back to the year 1645. See § 16 and § 33.

force, — these are the causes that have made the product of our total industry large, and have raised the amount of commodities received by our laborers above the level of wages secured in foreign countries. There is no possible way by which the industrial population of one country can secure more commodities than foreign peoples except by producing more. Prior to 1879 wages were high without protective duties; since that date they have remained higher than foreign wages, in spite of the fact that protective duties have diverted some capital from more productive to less productive investments.

Protected and unprotected industries.

The fundamental fact for the student to consider is that employers in unprotected industries have always paid higher money wages than foreign employers, but have enjoyed such advantages in natural resources and efficient labor that they could afford to pay more money wages, and yet sell their products as cheaply as the foreign producer. In the protected industries our natural advantages and the efficiency of our labor have not given employers so great advantages over foreign producers as our unprotected industries have enjoyed. Therefore they have been unable to establish business enterprises and to pay laborers as high money wages as unprotected employers could offer, without having the price of their product increased by a tariff duty. This increase of price merely enabled them to pay the high rate of money wages that had always prevailed in the unprotected industries. The removal of all protective duties would not affect permanently the general rate of wages. It

would close up some of the protected establishments, and the laborers employed there would be thrown out of employment. These unemployed laborers would temporarily cause an over-supply of labor, and their competition might reduce money wages in some other industries. But sooner or later these displaced laborers would find employment in new self-sustaining industries, and money wages would rise again. The result would be like the invention of a labor-saving machine that throws thousands of laborers out of employment. Temporarily these unemployed laborers tend to depress wages in other industries. Ultimately they find employment in new industries made possible by the invention of the machine; and wages do not permanently remain depressed.

The number of laborers affected by protective duties is small relatively in the United States.

In this country the relative number of laborers whose employment in protected industries depends directly upon the protective tariff is usually exaggerated. In 1880, it appeared that there were 7,299,000 farmers who were not affected directly by the tariff.[1] Further, 5,884,000 producers, engaged in trade or transportation, or in professional and personal services, were not affected directly by the tariff, since their work has to be done in this country and cannot be done abroad. Finally, 3,837,000 producers were employed in manufactures, mining, and mechanical pur-

[1] This figure excludes one half the agricultural population of Maine, New Hampshire, Vermont, and New York as possibly affected by Canadian competition. See LAUGHLIN, in SHAW, National Revenues, 181–184.

suits. But of these, 2,216,848 were employed as bakers, blacksmiths, carpenters, masons, etc., — whose work must be done in this country and cannot be done elsewhere, — or were employed producing goods that were exported to foreign markets and sold at prices as low as any in the world. This made about 15,400,000 workers who were not directly dependent upon the tariff for their employment, and only 1,990,000 laborers whose positions could be directly affected by protective duties.[1] Even of these 1,990,000 laborers in the so-called protected industries it is probable that many were employed in establishments of superior efficiency which would not be obliged to close by a withdrawal of protective duties. These figures show the absurdity of supposing that the wages of less than 1,990,000 protected laborers were able permanently to keep the wages of 15,400,000 unprotected laborers fifty per cent above the wages paid in foreign countries.

The advisability of imposing protective duties.

§ 246. While protective duties do not add permanently to the invested capital or the total industry of a country, and while they do cause an economic loss as long as the protected industries are not self-supporting, it is sometimes possible to favor them on other grounds. The economic waste of sustaining by protection an industry

[1] The Census of 1890 shows the following results: agriculture, 8,466,251 persons; professional and personal services, 5,304,829 persons; trade and transportation, 3,325,962 persons; manufactures, mechanics, and mining, 5,638,619 persons. By consulting Extra Census Bulletin, No. 99, May 18, 1895, the student can make the necessary deductions from Class i. and Class iv.

that is not self-supporting should be frankly admitted, but it may be fairly argued that sometimes this economic loss is counterbalanced by a greater gain.

Political reasons make it very advisable that a nation should be able to produce its own military armaments and *matériel* of war. Also, it may be politically advisable for a nation to produce its principal necessities of life, in order to be independent of other nations in case of war. Military and political considerations often must outweigh considerations of a purely economic character.

Protective duties may be justified on political grounds.

In a new country, such as the United States a century ago, capital is often scarce, as compared with the demand for it; the labor force is insufficient and high-priced; and the money expenses for capital and labor are high. These greater expenses retard the development of industries where unusual natural resources cannot be utilized immediately, where the greater efficiency of labor and capital does not compensate immediately for their greater cost. In the infancy of a country's industrial development it may be wise to aid a few industries by protective duties. These duties raise the prices more or less, but they enable the employer to overcome the initial disadvantages that confront him. Such protection should be extended for a reasonable time only, until the infant industry can get upon its feet and support itself. But each case in which protection is demanded should be considered very carefully upon its own merits. Moreover, such protection can be extended only to

Protection to infant industries.

a few industries. If protective duties are levied on all possible competing products, one tends to neutralize the advantage conferred by another. Protective duties must, so long as they are needed to support an industry, give that industry encouragement at the expense of all who pay the higher prices. If the protected industry soon becomes self-supporting, then the duty may be abolished, and the industry may be thenceforth advantageous to all interests. The danger with protective duties designed to foster infant industries is that the infants are seldom willing to give up the protection once accorded to them. In this country, after eighty years of protection, our "infant industries" oppose the removal of the protective duties. At the present time the infant-industry argument has little force when applied to the conditions existing in the United States, for this country is no longer in its industrial infancy.

It is impossible to discuss in this chapter all of the arguments advanced in favor of protective duties, but the student should examine them in the light of the principles explained in the preceding paragraphs.[1] One of these is connected with the infant-industries argument. It is claimed that a young or an undeveloped country needs protection in order to diversify its industry. Without protective duties, the young country will devote all its energy to the production of a few raw materials for which it has great advantages; it will not utilize its

Other arguments for protective duties.

[1] See SMITH, Wealth of Nations, Bk. iv. Chap. 2, for a few other cases where protective duties may be justified.

other natural resources; and will give no opportunity for the development of the skill that its population may possess for manufacturing pursuits. In a country possessed of few natural advantages, whose inhabitants have little energy, self-reliance, or progressiveness, it might be advantageous to resort to a few protective duties in order to give labor and capital the initial impulse toward a diversification of industries. This policy would cause loss, and would be expensive; but it might have certain advantages in the long run. In the United States such considerations have very little force. Our natural resources are too numerous and varied to make it possible for us to be shut up to the production of raw materials. In the eighteenth century, in spite of English competition and in the face of Parliament's prohibitory legislation, we established several lines of manufactures. After 1789 our capital and labor were invested in foreign commerce, until we did a large part of the carrying trade of the world. This was accomplished, not "by protection and bounties, but by unwearied exertion, by extreme economy, by unshaken perseverance, by that manly and resolute spirit which relies on itself to protect itself."[1] Since 1816, there have been periods when protective duties may reasonably be claimed to have hastened the growth of manufactures, but it cannot be shown that manufacturing industries would not have continued to develop, even without temporary protection. It can be seen that differentiation of industry would

[1] See WEBSTER's speech of 1824, State Papers and Speeches on the Tariff, 330.

have taken place without protection, if we merely look at what has happened in the internal trade of the country. The Constitution assured us freedom of trade throughout the length and breadth of our land. Now, have the newer sections been unable to diversify their industries in the face of the competition of the further-developed industries of the Northeast? From the very start hand-trades and mechanical pursuits, that must be carried on in the locality where needed, grew up beside agriculture. Then began the manufacture of coarse products, such as coarse cotton goods in the South, and coarser leather, iron, and woolen goods in the West. Gradually the manufacture of coarser products has moved from the East to the West and South, while the older states have had to devote themselves to the production of finer goods of all sorts. No one doubts that the West and South will gradually develop these finer grades of manufacture, as their population and capital increase; but meanwhile they have very wisely devoted much energy to agriculture and other pursuits in which they have unparalleled advantages. With its energetic and intelligent labor force, with various and unrivaled natural advantages, diversity of occupations in the United States was as sure to occur as the subjugation of our territory to the uses of civilization. In the economic development of our country the tariff has been a factor of minor importance.

§ 247. The limits of this chapter do not permit more than a brief treatment of the fundamental facts and principles that underlie the tariff question. The student

should be reminded, however, that our protective tariff has existed for a long time, and has diverted a great deal of labor and capital into investments that would be ruined by a sudden abolition of protective duties. At least five per cent of the labor force of the country (certainly not more than ten per cent) is now engaged in business enterprises which could not continue to exist if protection should be removed entirely. To compel this portion of our labor force, and a corresponding amount of capital, to find immediate investment elsewhere would cause great hardship to all interests. In most of the so-called protected industries many establishments, perhaps a majority in such industries as the manufactures of cotton and steel, would prosper under free trade; but the less efficient establishments would have to be closed up. Nevertheless, it is desirable and feasible to effect a gradual withdrawal of labor and capital from enterprises that cannot become self-sustaining.[1]

Our present tariff is an historical product, and must be treated as such.

[1] In the words of ADAM SMITH, "the equitable regard" for the interest of the protected industry "requires that changes of this kind should never be introduced suddenly; but slowly, gradually, and after a very long warning." "The legislature . . . ought, upon this very account, perhaps, to be particularly careful neither to establish any new monopolies of this kind, nor to extend further those which are already established. Every such regulation introduces some degree of real disorder into the constitution of the state, which it will be difficult afterwards to cure without occasioning another disorder."

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CHAPTER XIII.

THE DISTRIBUTION OF WEALTH.

I. Social Income.

§ 248. The wealth of a society at any time consists of all its accumulated material goods, whether more or less durable, whether capital goods or consumable wealth, and all personal services that it has at its disposal. It is impossible to measure and compute the various personal services that form part of the social wealth at any moment; so that the common conception of social wealth is limited to the material possessions of a community.

Social wealth and social income.

The monthly or annual income is to be distinguished carefully from the wealth of a society. The social income depends chiefly upon the use that is made of the social wealth. It depends upon the degree in which the natural resources of a country and the personal faculties of its inhabitants are utilized for the production of material goods or personal services; upon the manner in which capital is employed in creating new wealth; and upon the extent to which durable consumers' goods, the products of past industry (for example, dwelling houses, works of art, books, etc.), are made to yield the satisfactions that they have the power to confer.

Social income.

In this way the social income for any month or year may be divided into four constituent parts: —

1. The satisfactions derived from durable consumable goods, the product of past industry, that still remain in the possession of the community and add to its material enjoyments.

2. The personal services at the disposal of the society during the period for which the income is computed.

3. The material goods of a consumable character that are the product of the current industry for the period considered.

4. The producers' goods, or capital, created by the current industry of the period, and available for the production of economic goods during following periods.

If we conceive of social wealth as an *accumulation* or fund of economic goods, then social income should be conceived as a continual *flow* of personal services, consumable material wealth, and producers' goods or capital. National prosperity depends less upon the amount of wealth than upon the utilization of the national possessions in deriving the annual income. In this chapter we shall study the methods by which the social income is distributed among the individuals, or classes of individuals, that compose the society.

Social income a flow of economic goods.

§ 249. The general causes that determine the amount of the social income have been discussed in the chapter treating of the production of wealth. But the following facts need to be mentioned here: —

Causes that determine the amount of the social income.

1. Of the four constituent parts of social income, as enumerated in the preceding section, the first is quite independent of the enterprise and the labor of society in the period during which the income is estimated, and depends upon past production. The last three parts vary with the productivity of the labor of society during the period under consideration, and depend upon current production.

2. Considering now simply these last three parts of social income, which are the output of current industry, we know that they are produced by capitalistic methods of production. This is especially true of the consumable material goods and the capital goods that form the last two parts of social income.

3. The use of capital in production has increased marvelously during the last century, so that the efficiency of the labor of any society depends very largely upon the amount and kind of capital utilized in production. An increase of the labor force or a gain in the efficiency and energy of the present laborers would result in a considerable increase in the productivity of the industries of any society. But without an increase of capital there would be strict limits to the increased productivity caused in this way. Capital now performs such a large share of the work of production, and is responsible for such a great proportion of the efficiency of modern industry, that the social income of consumers' goods and producers' goods cannot be increased very greatly unless the amount of capital is first increased. In other words, that part of the social income which is

composed of the products of current industry depends at any period very largely upon the capital used in production. It follows, therefore, that the social income of the people of the United States during the year 1896 depended very largely upon the capital that had been accumulated and applied to production prior to that year. More labor or more efficient labor might have increased the year's income considerably, but the product of our industry was profoundly dependent upon capital produced by the labor of previous years.

§ 250. All private incomes, whether of capitalists, laborers, landowners, or employers come out of the social income of the society. The income of one class may increase at the expense of others; but it is possible for the incomes of *all* classes to increase only when the general social income is enlarged. In so far as the amount of the social income is dependent upon the capital employed in productive industry, the incomes of all classes of society are dependent upon the capital produced by the industry of the past.

Private incomes and social income.

II. Private Income.

§ 251. The income of an individual may be considered to be a certain portion of the material goods or personal services that make up the social income. In this sense economists speak of real income, as opposed to money income. The latter consists of income expressed in terms of money. This distinction is important. It is possible to increase

Real and money income.

money incomes without increasing real incomes. If the currency of the United States should be doubled in any year, money incomes of many persons might be increased, but the simultaneous increase of prices would wholly or partially offset the increase of money incomes. Manifestly an increase in money incomes due to such a cause as this does not affect the real income of the country in any particular. So, in comparing the money incomes of laborers in one country with those of another, it is necessary to compare the relative purchasing power of money in respect to those commodities which the laborer consumes. Higher money wages may or may not indicate higher real wages and a greater degree of prosperity of the laboring classes.

§ 252. Private incomes are regularly expressed and measured in terms of money. A money income may be considered a demand upon the current product or past accumulations of society for any commodities or services that the receiver of the income desires to purchase. Money incomes are regularly expended for the commodities or services that constitute the real income of the receiver. Only in a few cases are money incomes hoarded. When money is deposited in a bank, the depositor of the money really lends to some other person the right to demand commodities in the present, in return for the right to receive at some future time an equivalent income. Money incomes are expended for the following things : —

Money incomes further considered.

1. Services or consumable commodities, the product of current industry.

2. Durable consumable goods, the product of past industry, as in the purchase of a house or book produced in previous years.

3. Producers' goods or capital, the product either of current or of past industry.

§ 253. In treating of the distribution of the real income of a society among its individual members, we have to consider primarily the causes that affect the money incomes received by individuals. Within any social group, the real income of one individual will be larger or smaller than the real incomes of other individuals roughly in proportion as his money income is larger or smaller. Between different groups prices may be so different that this will not hold true.

The distribution of money incomes.

III. Primary and Secondary Distribution.

§ 254. Considering now the money incomes received by individuals, we must notice that the first process by which private money incomes are determined is the sale of products and services in the market. Material goods and services are sold for money, then the necessary expenses of production are paid, and a *net income* is secured. This is the primary fact in the distribution of money incomes among individuals, and may be called the primary process of distribution.

Primary distribution.

Suppose a farmer to own his land, buildings, live stock, machinery, and tools. Suppose him to perform all the labor of carrying on the farm. Then suppose that the

sales of the products from the farm amount to $2,500 annually, while the expenses for purchasing seed, renewing the land, repairing buildings, and keeping the stock and implements in good condition, amount to $1,500 each year. Then the farmer will have a gross income of $2,500 and a net income of $1,000. For him the distribution of wealth means simply the sale of his products and the payment of the expenses of running the farm.[1]

Primary distribution illustrated by the case of a farmer.

Assume other cases. A physician may own all the capital used in his profession. He gets his gross income by selling his services, and receives a net income proportioned to the excess of his gross income over the expenses of carrying on his business. So with a shoemaker, a tailor, or a proprietor of a small store, who may own his capital and land and do all his own work.

Other illustrations.

§ 255. Now, if all production were carried on by men who owned all the land and capital used in business, performed all the necessary labor, and carried on the enterprises on their own responsibility, the distribution of wealth would comprise nothing but the simple process of primary distribution.

Need of a secondary process of distribution.

[1] Commonly a farmer gets a part of his income by consuming some of his products on the farm. Here he receives his *real income* directly, without receiving a money income that must be expended for the real income. Yet, if the farmer should keep his books carefully, he ought to estimate the market value of all products consumed on the farm, and add this sum to the money income secured from the sale of products in the market.

But in modern business, we find two distinct classes of income receivers: —

1. Persons who secure a primary income from managing business on their own responsibility, and selling products or services for more than the expenses of producing them.

2. Persons who have business relations with the receivers of primary incomes. These persons may be laborers who agree to work for other men who bear the responsibility of furnishing capital and of assuming the risks of management. Second, they may be investors of capital who do not desire to assume the risks and responsibility of investing in a business that they must manage for themselves. Such capitalists often lend their capital to active business men. Third, they may be landowners who own land which they do not desire to utilize, and prefer to rent to men who do wish to use it. These three classes, hired laborers, lenders of capital, and landlords, receive secondary, or derivative, or dependent incomes from the persons who carry on industry on their own responsibility.

§ 256. The distribution of secondary incomes depends primarily upon the legal relations that exist between the independent employers, the responsible managers of business enterprises, on the one hand, and the dependent capitalists, landlords, and laborers, on the other.

The position of the employer in secondary distribution.

An employer, or a responsible manager of a business enterprise, usually has some capital of his own that he invests in the business undertaking. If he fails to

sell his products for more than the expenses of producing them, he must meet all expenses contracted, even if this has to be done out of his capital. The fate of the business depends upon his ability ; and, if he incurs a loss, he alone is responsible. In a common partnership each member risks all his property for the debts of the firm, while the limited liability of the business corporation limits the risk of the investors to the amount of the capital invested by them. On the other hand, the employer or manager secures all the profit when the business is successful.

The employer or responsible manager.

Capitalists and landowners who lend capital and land to the active managers of business enterprises, agree to place their capital and land at the disposal of the managers for a definite period of time, in return for interest or rent paid out of the gross income of the business. If the manager is unable to pay interest and rent, or to return the capital when the time for repayment comes, out of the gross income of the business, then he must draw upon his own capital for the necessary sums. The lenders of land and capital avoid much of the risk which the active manager assumes. The lenders can lose only when the business fails so badly that the capital loaned, or interest and rent due, cannot be recovered out of the assets of the enterprise. The capital of the manager serves as a buffer to protect the lenders from loss. On the other hand, lenders of capital and land receive only fixed payments, and have no share in any unusual profits that may come from the business.

The dependent capitalist and landlord.

The employer must also pay the hired laborers the wages agreed upon, even if this has to be done out of his capital. In many states the hired laborer has a "mechanics' lien" upon the product of the business, and is almost in the position of a preferred creditor. At the same time he regularly has no share in the profits that may be realized.

The hired laborer.

§ 257. There is still a third process by which private incomes are determined. Men who own dwelling houses, or land for residence sites, or some other durable good, may derive an income from renting them to other persons in return for stipulated payments. Such goods are not used in what is technically called productive industry. They are durable consumption-goods, for whose use other people are willing to pay money to the owners. The persons who agree to make such payments may be independent employers, or dependent capitalists, landowners, and laborers. In other words, the interest or rent paid for the use of durable consumption-goods may come out of either primary or secondary incomes. The owners of such durable consumption-goods consider them to be a part of their private capital, since they derive an income from them. In everyday speech, such goods may be called capital. But the student must notice that they are *private*, *acquisitive* capital merely; that is, they are the means by which private individuals secure a share of the social income. These durable consumption-goods are not used in what the economist defines technically as the production of wealth.

Tertiary distribution.

IV. General Classification of Private Incomes.

§ 258. From another point of view, it is possible to classify private incomes as follows: —

Profits, wages, interest, and rent.

1. Incomes received by responsible managers of business enterprises. These are commonly called profits.

2. Incomes received by laborers for their personal exertion in producing material goods or services. These are called wages or salaries.

3. Incomes received by owners of productive capital loaned to managers of enterprises, or by owners of durable consumption-goods loaned to other persons. These incomes are termed interest.

4. Incomes received by owners of land rented for business enterprises, or rented for use as residence sites, and for purposes that are not connected with the technical process of wealth production. Such an income is called rent.

§ 259. Suppose a manufacturer to own an acre of land and $20,000 capital. He invests $20,000 in building and equipping a factory, of which sum he borrows $10,000 at six per cent interest. This will leave him $10,000 of his own capital, which he invests and re-invests in hiring laborers and buying materials. Suppose that he rents an additional acre of land for use in the business, agreeing to pay an annual rental of $400. Then he hires twenty laborers at annual wages of $600 each. Each year he is obliged to spend $2,000 for repairing his buildings

Illustrations of these forms of income.

and keeping his machinery in good condition; while his taxes and insurance amount to $600 annually, and miscellaneous expenses to $400 more. In the course of the year he turns out a product for which he receives a gross return of $30,000. In so doing he spends $10,000 for raw materials, etc., so that he has $20,000 available for meeting his other expenses. These expenses are, first, $2,000 for repairs, $600 for insurance and taxes, and $400 for miscellaneous expenses. This leaves an income of $17,000 available for meeting his other obligations. These are: $12,000 for wages, $600 for interest, and $400 for rent. After paying these last expenses he has a gross profit of $4,000 on the year's business. But it is often customary to divide these gross profits into certain constituent parts. The manufacturer has $20,000 invested in the business, on which he could have secured six per cent interest without incurring the risks and trouble of establishing and running the enterprise. Therefore he will estimate that $1,200 of these gross profits represents interest on his invested capital. Similarly he owns an acre of land which could have been rented for $400. Consequently, he will estimate that $400 of the gross profits represents merely the rent of his land. His net profits, therefore, due to his enterprise in establishing the industry, will be $4,000 — ($1,200 + $400) = $2,400. We shall now proceed to consider the causes that affect the terms upon which a manager hires laborers, borrows capital, and rents land, and the causes that make it possible for him to derive a net profit from his business.

V. Interest.

§ 260. In studying the production of wealth, we saw that social, or productive, capital is an important factor, and we defined capital as the produced instruments of indirect production. In studying the distribution of wealth, we have seen that men secure incomes, not only from those forms of productive capital that are reduced to private ownership, but also from durable consumers' goods, such as houses, etc.[1] In popular speech, every possession of an individual that is a means of securing a money income is called capital.[2] The economist needs, therefore, to recognize that capital in distribution plays a different part from what it does in production. In distribution, we consider methods by which private individuals acquire incomes. Capital, therefore, must be viewed as a means of private acquisition, not as a means of producing social wealth. We define private or acquisitive capital as any product of human industry that serves as a source of income to individuals. It includes: —

Private or acquisitive capital.

1. Those forms of social or productive capital that are subject to private ownership, and serve as sources of income to individuals. Land is not included here, and must be considered separately.

[1] Carriages rented by liverymen, and books rented by a circulating library, are other examples of consumers' goods, used as means of securing money incomes.

[2] Even land is included in the popular conception of private capital. This should not be included by the economist, however, since land is not produced, and the income received from it differs from the income secured from other forms of private capital.

2. Those durable consumers' goods that can be "rented" to others, and serve as sources of private income to their owners.

§ 261. Interest is paid, first of all, for the use of productive capital. Now such capital is worthless in itself, but is very valuable when used in the production of economic goods. What determines its value? For instance, what determines the value of a machine or a factory? The value of capital, like that of any other product of industry, is determined *primarily* by its marginal utility. In the case of capital, the marginal utility depends upon the utility of its marginal product. But if competition is free, then the expenses of production will exert an influence on the supply. Ultimately the price received for a machine, or any other form of productive capital, will be such as equalizes the utility of the marginal product with the marginal expenses of production. On the other hand, when some element of monopoly, such as a patent right, prevents competition from operating, the price of the capital good will be fixed at the point of highest net returns.

The value of productive capital.

Interest is also paid for the use of durable consumers' goods such as dwelling houses. The question of the value of such goods needs no further explanation.

The value of durable goods.

§ 262. In the case of a long-time loan, such as a mortgage loan on real estate for a term of years, or an investment in the bonds of a corporation, interest is paid for the use of capital. Many errors spring from a

failure to perceive that such a long-time loan is really a loan of productive capital in the form of machinery and buildings, and not a loan of money. The loan may be made in money, but the money is immediately invested by the borrower in some form of productive capital. Money serves merely as an instrument for effecting this loan of capital. Such loans, and the rate of interest upon them, are not affected by the amount of money in circulation, as will be shown.

Short and long time loans.

Short-time loans are somewhat different. They are usually made by bankers, and may be either call loans, payable on the demand of the lender, or thirty-, sixty-, and ninety-day loans, which bankers make by discounting commercial paper. Short-time loans are required by merchants who have contracted debts in buying raw materials or stocks of finished products, and must make payment for them before the goods can be sold again. Such merchants continually borrow money on call or for thirty, sixty, or ninety days. They desire immediate means of payment, and expect in a few weeks to return the money borrowed when they dispose of their products. Short-time loans constitute a demand for means of paying debts. They are affected, therefore, by temporary changes in the money market.

Short-time loans are more nearly loans of money.

§ 263. Productive capital is valued in terms of money. When a man borrows productive capital, the loan is commonly expressed in terms of money, and a certain per cent of the principal is agreed upon as the rate of

interest. Two questions must now be examined: *First*, Why is it that the person who lends productive capital can secure this interest or premium for the loan? *Second*, What determines the rate of interest that such a person can secure?

The rate of interest on productive capital.

The payment of interest for a loan of capital is not explained by simply showing that capital serves to increase production, to improve the quality of the product, and to secure products that would be unattainable otherwise. If men would be willing, without receiving interest, to accumulate enough capital to carry on the business of the world, then no one could secure interest. But this is something that cannot be expected. If a person has $1,000, he can expend it for consumers' goods that are available immediately. If he invests it in capital, he can secure a return only after some time has elapsed. When he invests $1,000 in productive capital, he converts a present available income into such a form that it is available only in the future. Now, persons will not exchange a present income of $1,000 for a future income of only $1,000. This is for two principal reasons: *First*, the future is always more or less uncertain, and "a bird in the hand is worth two in the bush." *Second*, even when the uncertainty and risk of the future is reduced to a minimum, most persons underestimate or undervalue future pleasures and pains. But many people are willing to invest $1,000 of income in capital so that it will be un-

Interest arises from difference between the value of present and future goods.

available for a year, in return for $1,050 at the end of that period. The $50 premium would be interest in this case. It would be a premium added to the principal of the loan available only at the end of the year, in order to make it equivalent to a present income of $1,000. Interest is paid, therefore, as a premium to equalize future goods or future income with present goods or income, in the estimation of possible investors. Capital formation implies a willingness to invest present income in producers' goods that are available only in the future. Interest is the inducement necessary to insure the formation of enough capital to meet the needs of business.

The supply of productive capital.

Capital may be furnished by three classes of persons. *First*, it may come from rich persons with large incomes, who can easily save large amounts of income and invest them in capital. *Second*, it may be supplied by persons of moderate means who wish to provide for the future, and would do so even at very low rates of interest. Both of these classes of investors do not require large premiums in order to induce them to convert part of their present incomes into capital. In the *third* place, we have marginal investors, who will furnish more or less capital according to the inducements offered for its investment. These may be wealthy persons, or may be people of moderate means, who would save and invest a portion of their incomes even at low rates of interest. But they will save more, and furnish more capital, if the premium offered for investments is high.

The demand for productive capital comes from all the industries that are needed to meet the wants of the society. The demand will be large in proportion to the energy and enterprise of the population in all branches of economic activity. In the second place, the demand will be stimulated by the natural opportunities offered for favorable investments. Both of these causes have made the demand for capital very active in the United States.

The demand for productive capital.

The rate of interest is really the rate of annual income that will equalize future income with present in the minds of those persons who furnish the *marginal* portion of the supply of capital needed to meet the demands of the business of a society. In other words, we have merely another case of the equalization of the supply and the demand through changes in price, — in this case "price" meaning the premium offered for future goods or income. Prices of commodities must be high enough to enable the marginal investors of capital to secure a premium, a rate of interest, that will induce them to furnish the amount of capital required.

The rate of interest on productive capital.

The demand for capital comes from business men, the managers of industrial enterprises. They usually invest considerable capital of their own, and desire to invest more when the prices of their products are such as to make it profitable to put more capital into their businesses. Therefore they desire to secure loans from persons who have surplus incomes to invest, but who do not desire

The equalization of supply and demand accomplished in the loan market.

to enter into active business life. In an advanced stage of economic development, a large number of investors, having no active part in business, and a large number of active managers of enterprises, form the market for loans.

1. The demand for loans varies. Business men desire to borrow when they calculate that they can secure from additional investments of capital enough to pay the required rate of interest, and to leave some profit besides. When business is active, and the probable profits of business are high, more business managers will desire to borrow. On the other hand, a higher rate of interest tends to discourage borrowing.

2. The supply of loans comes partly from persons or institutions that are unwilling to engage in active business, or incapacitated from doing so. Retired business men, managers of trust funds, banking houses, universities, and similar institutions belong to this class of investors. The supply of capital furnished from such sources does not vary quickly as the rate of interest on loans increases or decreases. In the second place, loanable capital is furnished by people who might engage in active business if the rate of interest should become so low as to leave large profits to active managers of industrial enterprises. The supply of capital secured from such persons varies rapidly as the rate of interest changes. The combined supplies of loanable capital secured from these two sources show, on the whole, a tendency to vary directly as the rate of interest secured from loans.

3. The competition of borrowers and lenders in the loan market is the efficient force that determines the current rate of interest. Capital owned and invested by active business managers does not come into the loan market, but it exercises an influence upon the competition for loans that takes place there. If managers have a large amount of capital of their own, the demand for loans is less; while a smaller amount in the ownership of managers increases their demands in the loan market. Thus the rate of interest that equalizes future income with present is determined primarily in the market for loans.

Interest may be computed on all productive capital.

When loans of productive capital become common, and a market rate of interest is established, then all capital invested in productive enterprises is considered to be earning interest, whether such capital is owned by the manager of the business or is borrowed from other persons. Thus an employer who has $20,000 of his own capital invested in his business may not estimate that he has made any net profits until he has charged $1,200 of his income to the account of interest on his capital at the market rate, say six per cent.

Risk as a factor in determining interest.

So far, we have assumed that the risk attending the investment of capital is the same in all cases. But this is far from true. Of course, a certain element of risk attends nearly all exchanges of present for future incomes. A business manager may lose all the capital that he invests, and may lose that which he borrows. Again, borrowers

may prove dishonest, and may defraud the lenders, sometimes in spite of legal restrictions. But these risks are not the same in all investments, and therefore the rate of interest varies. Manifestly a larger premium is necessary to equalize future income with present when there is a risk that the promised future income may never be secured. An unusually high rate of interest regularly points to an unusual risk.

In progressive countries the rate of interest tends to decline. For this the following reasons may be assigned: In such countries an increasing number of people possess capital, and are unwilling or unable to engage in active business. The supply of loanable capital is greatly increased, and the interest rate that equalizes demand and supply is lowered. In the second place, business becomes less speculative as a country develops, and the risk attending investments is lessened. Finally, in such countries the laws do more to facilitate the prompt payment or collection of debts, thereby further diminishing risks and tending to lower the rate of interest.

Tendency of the rate of interest to decline.

§ 264. The case of loans of durable consumers' goods requires little special explanation. A person who invests $5,000 in a house that he rents to another person for a year is exchanging a present income of $5,000 for a future sum of $5,000,[1]

Interest on durable consumers' goods.

[1] This assumes that allowance is made for repairs and for the depreciation in the value of the house. The so-called "rent," of a dwelling house includes repairs and depreciation, so that the owner of the property may receive back the original value of the house with interest at the current rate.

plus an annual interest of $300. He exchanges $5,000 of present goods for $5,300 of goods available a year hence. The rate of interest on such loans is determined by the laws of demand and supply.

§ 265. Short-time loans command interest for the same reasons as loans of productive capital for a longer period.

The rate of interest on short-time loans.

But the rate of interest is generally higher on short-time loans. This is because capital lent for short periods of one, two, or three months must be continually re-invested, and may lie idle for a part of the time. The rate of interest on short-time loans fluctuates with changes in the money market. If money becomes "tight," banks find that their reserves diminish, and they are obliged to contract their loans and discounts. This can be done by raising the interest on short-time loans. When the stringency is over, the banks find that their reserves increase, and they extend their discounts in order to utilize their resources as far as possible. Discounts can be increased by offering them at lower rates of interest. The margin of fluctuation is very great in the case of these short loans. On October 29, 1896, the rate of interest on call loans in New York was ten per cent at the opening of the day's business. By noon it had risen to fifty per cent annual interest, and before night rose to eighty and one hundred per cent. On the other hand, money on call may occasionally be in little demand at one or two per cent.

§ 266. For some purposes it is useful to speak of a general loan market, in which loans of productive cap-

ital for permanent investments or for short periods of time, and loans of durable consumers' goods are offered and demanded. Unquestionably there is a connection between the three. If the normal rate of return on one kind of loans exceeds the return on others, the supply of capital offered for that purpose will increase, and the rate will fall to the general level. This may be a gradual process, however. If the rates secured by banks on their short-time loans are unusually high, the profits of bankers will be larger, and more capital will flow into the banking business sooner or later.[1]

The loan market.

§ 267. It is an old fallacy that an increase in the supply of money lowers the interest on permanent investments, while a decreased supply of money raises the rate. This may be true temporarily of short-time loans, but is false when applied to more permanent investments. The demand for loans means a demand for various other forms of productive capital, not a demand for money. So, too, the supply of loans is a supply of loanable capital, not a supply of money. If the amount of money is increased and prices are raised, there will be an increase in the money value of the supply of capital goods, *but* the money expression of the

The rate of interest on permanent investments is not affected by the supply of money.

[1] In the general loan market two other kinds of loans might be mentioned. First, a few people, either from imprudence or from misfortune, borrow funds to relieve personal necessities. But such loans are insignificant in amount when compared with the general mass of loans. Second, governments borrow large amounts for public purposes. The demand of a government for loans in war times may greatly raise rates of interest.

demand for capital will be increased also; and the conditions of demand and supply will be unaltered. If it costs twice as much to establish productive enterprises when the prices of products are doubled, then the money value of the capital needed to build a factory will increase, and the money demand for capital will increase proportionately to the increased supply of money.

§ 268. From antiquity until comparatively modern times the justice of interest-taking was attacked by philosophers, statesmen, and theologians. During the Middle Ages both the Roman Church and the civil authorities of Europe prohibited the practice. This opposition to interest, for the most part, rested upon the assumptions that a loan was a loan of money, and that money was sterile and unable to produce more money. For this reason interest-taking was viewed as robbery. In modern times, however, it has been seen that most loans are loans of productive capital, and that producers need a large supply of loanable capital. Three centuries ago, the growing need of the business world for capital broke down the mediæval prohibition of interest. It is the present social importance of a large supply of capital that has led modern peoples to justify interest-taking.

The justification of interest-taking.

At the present time usury laws are quite common. Most of our states attempt to fix a maximum rate of interest. Such laws declare the exaction of more than a certain rate of interest to be usury; they make such contracts void at law; and sometimes inflict penalties for charging usurious interest. It

Usury laws.

has been found that the commercial world manages to evade these usury laws in one way or another, so that they are practically inoperative in the general loan market. When applied to commercial transactions these laws are beyond question unwise. On the other hand, our usury laws have helped poor people who sometimes borrow to meet personal necessities to keep out of the hands of money sharks, who make a practice of victimizing such ignorant or helpless borrowers. It would be wise to remove such restrictions from the loan market, and to leave the rate of interest to be determined by the forces of supply and demand in the commercial world. A high rate of interest tends to remedy itself by attracting an increased supply of capital. On the other hand, the interests of the poor who may have to borrow to relieve their personal necessities may be safeguarded by leaving to the courts the work of deciding when interest contracts are usurious, and ought not to be enforced.

VI. Rent.

§ 269. Rent, in the economic use of the word, is the return that is secured by the owner of any natural agent. The most common case is the rent secured from land, but the rent of water privileges, dock facilities, etc., is an income of the same sort. Natural agents are reduced to private ownership when they become scarce relatively to the demand for them. Land became private property only when nomadic peoples settled down to agricultural life, and arable land became scarce.

The nature of rent.

§ 270. Natural agents are used in production and serve to satisfy human wants. Thus far they resemble capital. But they differ from capital in that they are not produced, and their supply is fixed by nature. They become economic goods only when the demand for them increases so as to make them scarce, instead of free goods. What determines the value of natural agents that become relatively scarce? Manifestly their value depends upon their scarcity, and is not affected by expenses of production. The owner of a scarce natural agent, such as a piece of land, can secure from it an annual income, or rent, say of $600. Then, if the market rate of interest on capital happens to be six per cent, the value of the piece of land will be such a principal sum as will yield $600 annually with interest at the current rate. In this case the land would be worth $10,000. Now it is necessary to explain the causes that determine the annual income or rent obtainable from land.

The value of natural agents.

But first it is necessary to explain that improvements upon land or upon any natural agent are capital, and have a value proportioned to their marginal expenses of production. Land is in itself a natural agent, but fences, ditches, dikes, walls, and fertilizers are capital; and are valued according to the expenses of producing them. A water power is a natural agent, but a dam and a canal constructed for the purpose of utilizing the power are capital. A piece of land or a water power, upon which no labor and capital have ever been expended,

Improvements upon land or upon other natural agents are capital.

may be leased or sold at prices that depend solely upon scarcity.

§ 271. The income received from natural agents may be explained by considering its most common form, the rent of land. Such rent arises out of differences in the desirability of various tracts of land, due to differences in location or in natural fertility. For agricultural purposes the natural fertility of land is important. Nature does much more to make some lands fertile than it does for others. Temperature and rainfall favor some lands. Some soils are far stronger than others, and can be used continually without deteriorating in the same degree. A plain has certain advantages over the slopes of a mountain, and land with a southern exposure is superior to land that slopes to the north. When land is once brought into cultivation, then the condition of the soil depends also upon the methods employed to preserve its fertility; but natural differences still remain very important. The location of a tract of land is important in determining its desirability for any purpose whatever. Agricultural land must be accessible to the market, and the rent secured from it will depend partly upon this consideration. Land used for residence purposes will be more or less desirable according to its accessibility, its healthfulness, and the beauty of its surroundings. Land used for the location of manufacturing or commercial enterprises must, above all, be accessible to the market, to means of transportation, and to the labor supply.

The income from natural agents.

§ 272. The causes that determine rent can be illustrated well by studying the rent from agricultural lands.

The rent of agricultural lands.

In new countries land is sometimes superabundant. The settlers occupy first those sites which offer the best immediate advantages either for defense or for securing a quick return from the soil. Produce is raised from the land with little expenditure of capital and labor. Suppose that the average investment on each acre of wheat land is five dollars,[1] and that the average return per acre is fifteen bushels of wheat. Now suppose that population grows and that the demand for wheat increases so that the price rises. How will this increased demand be met? Wheat-raisers can either invest more capital on the land already cultivated, and secure a larger aggregate but a smaller proportional return; or they can apply the additional labor and capital to new lands, which may not be as fertile as the old, but may give as large returns as could be secured by additional investments on the land formerly cultivated. Suppose that, by investing five dollars more on the old lands, the yield could be increased to twenty-five bushels, while the new investments on the poorer lands would have yielded ten bushels. Then producers would with equal profit invest the additional five dollars on old land or on new but poorer land. If, however, the additional investment would have increased the yield of the old lands to

[1] We will suppose that this covers not only all expenses for labor and materials, but also the expenses for interest on capital, so that it will leave the producer both interest on his capital and fair wages for his work.

only twenty-four bushels, then producers would have preferred to take the poorer lands into cultivation.

Now, as soon as the demand for wheat had increased so that the investment of five dollars per acre on the most available lands could not satisfy it, prices would rise. This would continue until prices became high enough to make it profitable to invest more labor and capital, say five dollars more per acre, either upon the old lands, subject to a diminishing return, or upon new and poorer lands. The increased supply would be produced at an increased marginal expense, and prices must rise high enough to cover this expense, if the demand is to be satisfied. The former expense of raising wheat was five dollars for fifteen bushels, or thirty-three cents per bushel. The increased supply of ten bushels per acre required an increased outlay of five dollars, whether raised on old lands by more intensive cultivation or on new lands. The marginal expense of raising wheat has risen therefore to fifty cents per bushel, and prices must rise to that point before the supply will be increased.

Diminishing returns increase the marginal expenses of production.

When increasing demand forces up the price of wheat and enables an increased supply to be furnished at a greater marginal expense, rent will appear. In the case just assumed, the producer of wheat on the older and better land can now invest five dollars per acre, produce fifteen bushels worth fifty cents per bushel, and can secure a surplus of two dollars and a half. Or he can invest ten dollars per acre, produce twenty-five bushels worth fifty cents a bushel, and can secure a sur-

plus of two dollars and a half. On the other hand, before the increasing demand raised the price of wheat from thirty-three to fifty cents, such a wheat raiser invested five dollars per acre, produced fifteen bushels worth only five dollars, and secured only enough to cover his expenses. But the rise in the price of wheat may have led some producers to resort to poorer lands, investing five dollars per acre and securing ten bushels of wheat worth five dollars. Such producers receive no surplus, and could pay no rent for their lands. Now, the owners of the better lands can secure the surplus of two dollars and a half that is received from those lands as soon as wheat rises to fifty cents per bushel. This surplus is economic rent.

Rent is a surplus secured on more productive investments of capital and labor.

In the case just assumed, the second investment of five dollars per acre, either upon the old and better land or upon the new and poorer, yielded no surplus of income over expense. A rent was secured from the more productive investments of labor and capital which yielded a surplus. Rents are measured always in this way, and are a differential return secured from investments that are more productive than the marginal investments that receive only enough to just pay for making them. These marginal investments may be made on new and poorer land, in which case rent is measured by the superiority of the better land over the poorer. On the other hand, the marginal investments may be made on the older lands

Economic rent is a differential return secured from the more productive investments upon land.

because they will secure there a larger return than could be gained from poorer lands. In the first case economists speak of an *extensive* margin of cultivation, that is, an investment on the marginal lands from which producers secure just enough to cover their expenses. In the second case, there is an *intensive* margin of cultivation, that is, a more complete but more expensive utilization of old lands, which is made possible by increased prices.

The opening up of new lands may throw less fertile soils out of cultivation.

In a new country settlers are seldom able to cultivate the richest soils first. They select those that promise the largest immediate return. As time goes on, richer soils may be utilized. The result is to increase the supply of produce, to lower prices, and to throw out of cultivation the poorest lands that formerly were in use. The demand may be satisfied, under such circumstances, by a less intensive investment of labor and capital upon better soils, and by a less extensive investment upon poorer soils. Such a change in methods of production will decrease the difference between the marginal investments and the more productive investments of labor and capital. This will lower the surplus, or rent, secured on the superior investments.

§ 273. Land utilized in manufacturing or commercial enterprises is valued according to its location, both in respect to the market and to the labor supply.[1] In-

[1] Of course location is an important element in determining the desirability of agricultural land. Proximity to the market, or to railroads and canals, decreases the cost of placing wheat in the market.

creasing demand for products will raise prices so that producers will push their marginal investments on to more distant and less desirable lands, or will invest more intensively upon land already occupied. Sometimes there may be no actual increase of price, but rather a failure of prices to fall as fast as they might otherwise. The principles governing the rents of such lands are the same as those that determine agricultural rents.

The rent of land used for other purposes.

§ 274. Rents do not raise prices, but are caused by high prices. The prices of freely produced commodities tend to approximate the marginal expenses of production. Now, in the cases assumed, rent did not appear until increasing demand had raised the price of wheat and made it possible to invest five dollars additional, for which an additional return of only ten bushels was secured either upon the old lands or upon the new and poorer lands. Therefore the rent of two dollars and a half per acre was a surplus caused by the rise of prices, and not a cause of high prices. If the landlord should have charged no rent, prices would not have fallen below the marginal expenses of producing the increased supply; and the profits of the farmers on the better lands would have been increased without any possibility of a change of prices. The enormous rents paid for land in the business center of a large city are due to the exceptional facilities offered by such tracts for doing a large business, by investing large amounts of capital that secure surplus profits before the marginal investment is made,

Rent is not a cause of high prices.

say the last story of the building, at which point the returns received only just pay for the expense of making the outlay. Demand for products and services forces prices up so that the supply can be increased by more intensive investment on city lands, or more extensive investment in the suburbs. Economic rent is a result of this more intensive or more extensive investment, and not a cause of higher prices.

Of course this applies solely to economic rent, not to the so-called rent of buildings and improvements, which is really interest on capital. Sometimes it is said that "rent does not enter into prices." Such a statement means merely that rent is not a cause of higher prices. Manifestly, part of the price secured from more productive investments goes to pay rents. The statement that rent is an effect, not a cause, of high prices needs one important qualification. Land will normally be rented for such purposes as will enable the tenant to pay the highest rental possible. It may happen that lands otherwise available for use in one branch of business may yield a higher rent when used for some other purpose. When this happens, the supply of the product of the first industry can be increased only by applying capital more intensively upon lands formerly used or by resorting to newer and poorer lands. Under such circumstances the marginal expenses of producing that product would be greater than they would have been if it had been practicable to invest capital upon the land that yielded a higher rent when utilized in some other industry. Of course this means

Limitations upon this principle.

that prices must rise higher than would have been necessary otherwise before the supply can be increased. These higher prices will be the result of the impossibility of utilizing for other purposes the land rented. In the rents of desirable city lots this is a very important consideration. Probably no land available for wholesale business, for instance, would fail to bear some rent when used for other purposes. And this necessitates more intensive investment of capital upon the land actually utilized by wholesale dealers, in order to supply a given demand.[1]

§ 275. Moreover, actual rents differ sometimes from true economic rents. This economic law of rent presupposes competition. It assumes that a landlord will eject a tenant the moment that he finds another who can pay more rent, and that tenants will give up their locations the moment the rent rises above the true economic rent. These conditions are only partially fulfilled, as competition is often imperfect. Landlords often do not exact full competitive rents from old tenants. Farmers who cultivate land for subsistence may be forced to pay more than full economic rents, since they may be more likely to accept the heavier burden than to look around for other land. On the other hand, competition is much more active among business men, and tends to make actual rentals approximate the true economic rents throughout the commercial world.

Actual rent frequently differs from the true economic rent.

§ 276. It has been claimed that the tendency of eco-

[1] See MARSHALL, Principles of Economics, 478–485.

nomic progress is to cause a decided increase in rents. In agriculture, it is said, the law of diminishing returns drives producers constantly to cultivate poorer lands. This increases the differential rents secured from better lands. In the case of town lots, it is urged that every increase of population raises rentals in a marked manner. All such increases of rents, it is thought, are due solely to the growth of society, not to the activity of the particular landowners whose rentals are raised. Hence the expression "the unearned increment" has been applied to this growth of rent produced by social development.

The alleged tendency of rents to increase.

Those who speak of the unearned increment commonly overlook the losses that many landowners suffer. Large sums spent in developing city real estate have been entirely lost, as the enterprises have often proved failures. Changes in the location of street railways or in the movement of fashion or business from one section to another, lower rents in some sections of a city nearly as much as they increase them in another. The development of facilities for rapid transit tends to decrease the demand for city lots for residence purposes. In the case of agricultural lands, rents have been lowered repeatedly over large sections of country. In England, agricultural rents have been lowered greatly by the competition of cheaper wheat, beef, and pork produced in the United States. In the eastern portion of this country agricultural rents have been lowered by the opening up of the wheat lands of the West. Many farms in New England cannot be

Losses of landowners are usually overlooked.

rented for enough to pay interest on buildings and improvements on the land. If we set off these decreases against the increases of rent that have been caused by social development, the net unearned increment received by landowners, *as a class*, is very much smaller than is usually represented.

Only in the case of landowners who own particularly desirable tracts of land can it be claimed that there is a great unearned increment. Some favored situations in the business centers of cities, some sites available for docks, for terminal facilities for railroads, etc., have become enormously valuable, so that a large unearned increment has been received.[1]

Yet the unearned increment is very large in individual cases.

VII. Wages.

§ 277. Primarily, wages are the reward received by hired laborers. The term is extended sometimes to include the independent incomes received by workers who carry on any sort of productive activity upon their own account; but for the present we shall investigate the laws that determine the reward, the dependent income, secured by hired laborers.

Definition of wages.

Nominal wages are the amounts of money received by laborers during any specified time. Real wages are the "necessaries, comforts, and luxuries" that the laborer is able to command as

Real and nominal wages.

[1] In the case of city lots the increment of land values is partly offset by assessments for a large part of the expense for improvements, such as sewers, street paving, etc., that benefit the property directly.

remuneration for his labor. If one laborer receives higher nominal or money wages than another, but is obliged to pay more for most of the commodities that he is accustomed to buy, then his real wages may be no higher. Furthermore, two laborers may receive the same money wages, but one may receive house rent or board free, or may be given various privileges, that enable him to make his money go further in supplying his wants. In such a case, the real wages of the two men would not be the same.

§ 278. Persons who work for hire sometimes receive returns that are called salaries, not wages. It is important to distinguish between the two forms of income. The *first* difference is that a salary continues as long as the person receiving it is in the employ of the *entrepreneur* who pays it. On the other hand, wages generally stop the moment work is interrupted. *Second*, salaried employees are usually engaged for more definite terms that sometimes are of long duration; while the wage earner has a less secure tenure of his position. *Third*, persons who receive salaries generally stand in closer personal relations with their employers, and are more likely to occupy equal social positions.

Wages and salaries.

§ 279. Time wages are wages paid according to the time that a laborer works. Piece wages are paid according to the quantity of work that is done. Men employed on time wages have less direct interest in making their product as large as possible; so that piece workers often do more

Time wages and piece wages.

work in a given length of time, and may earn more money each day.

But it usually holds true that men producing the same commodity receive about the same wages for each unit of product, whether paid by the day and week or by the piece. In other words, the labor-cost of each unit of a commodity tends to be nearly the same. Competition among employers can produce no other result. An employer who produces at a much higher rate for the labor expended upon each unit of product, will be likely to be driven out of business unless he possesses some advantage that compensates for this greater labor-cost. Finally, the student needs to be reminded that there is no necessary connection between high rates of daily or weekly wages and a high labor-cost for each unit of output, or between low earnings and low labor-cost. Efficiency of the labor as well as the daily or weekly wages must be considered in determining whether the labor-cost is high or low.[1] In general it may be said that laborers receiving higher time wages are more efficient than those whose wages are low. But this greater efficiency is not always proportioned to the difference in the rates of wages. Sometimes it has been shown to be less, at other times more, than this difference.

But labor-cost tends to be the same under both methods of remuneration.

§ 280. The person who does not possess the capital necessary to enable him to undertake production on his

[1] On the subject of efficiency, see § 77. See HOBSON, Evolution of Modern Capitalism, 261–284; BRASSEY, Work and Wages; WALKER, The Wages Question; SCHOENHOF, The Economy of High Wages.

own account must become a hired laborer by selling his services to some employer. The wages contract is made before work is undertaken, and wages must be determined some time in advance of the sale of the product. Moreover, the employer is obliged by law to pay the stipulated wages whether the product prove salable or unsalable. Evidently he has to estimate carefully the probable future value of the goods produced. Therefore wages have been called "the *discounted* product of industry," and defined as "what capitalists are ready to advance on the expectation of a future return." Whenever the process of production is so long that weeks or months elapse before the product is completed and marketed, then laborers receive weekly or monthly wages a considerable time before any money return is received from their work. Under such circumstances, employers cannot undertake enterprises unless they have at their disposal sufficient funds to enable them to advance weekly or monthly wages, during the time that must elapse before any return is secured from the sale of the product.

General considerations concerning wages of the hired laborer.

§ 281. The question of wages must be studied in two aspects: *First*, we must investigate the forces that determine whether the entire laboring class of a country or a section secures a larger or a smaller quantity of real wages, of the "necessaries, comforts, and luxuries of life." Why is it, for instance, that the wages received by the entire class of wage-earners have been greater in the United States than in

General and relative wages.

Europe? This question is the problem of *general* wages. *Secondly*, we may inquire into the causes that determine the various rates of wages that are paid to different individual laborers or groups of laborers within a country. On what grounds, for instance, can we explain the different wages paid to various classes of laborers within the United States? This is the question of *relative* wages. General wages must be first considered.

§ 282. General wages, or wages considered as the share of the social income received by the entire class of hired laborers, are a varying share of a varying product. If the productivity of the industry of a society is great, then the social income will be large, and the quantity of commodities or services received by laborers may be large. In the second place, the share or portion of the social income received by the laboring class will be larger or smaller in proportion to the advantages or disadvantages under which the hired laborers make wage contracts with their employers. Wages may possibly increase somewhat at the expense of the share of the product that goes to employers, or they may increase as a result of increased productivity without decreasing the shares of the employing classes.

General wages, or wages as the share of the class of hired laborers in the national income.

§ 283. General wages find an upper limit beyond which they cannot absorb a larger share of the social income. They cannot claim permanently so large a portion of the product that employers will be discouraged from undertaking or carrying on business enterprises.

If they should ever rise so high, the number of industries would diminish, the general demand for labor would decrease, and wages would necessarily fall sooner or later. Neither can wages absorb permanently so much of the product that interest cannot be paid to capitalists. If this should happen, the supply of capital would diminish and the demand for labor would gradually fall off. Moreover, wages cannot absorb the share of the product that goes to landowners in the form of rent. This share is received on account of differences in the advantages offered by various tracts of land, and cannot be absorbed by wages.

The limits to the increase of wages.

Assuming that contracts between employers and laborers have determined the gross money wages (hence the general wages) of the wage-earning classes of the country for a certain period, then we may notice a further limitation to general wages. Laborers may dispose of their money wages in four ways: —

General wages limited somewhat by past industry.

1. In the purchase of consumable commodities that have recently been completed. Thus from sixty to eighty per cent of a laborer's income is expended for food, clothes, fuel, light, and a few luxuries.

2. In the purchase or hire of consumable commodities that may have been completed many years previous. Thus laborers spend from twelve to fifteen per cent of their income for house rent. Some buy the houses in which they live.

3. In the purchase of personal services. This is a

small item in the expenditure of the majority of hired laborers.

4. Finally, part of the income may be saved. This means that it is invested in capital either directly or indirectly. In this country the deposits in the savings banks in 1894 amounted to $1,810,000,000, the larger part of which belonged to wage-earners.

In so far as the laborers spend their wages for consumable commodities, — and such expenditures form sixty or eighty per cent of the total, — they are dependent upon the supplies of consumable goods now in the markets. But these consumable goods in the market are the product of capital and labor invested *in the past*, and are only slightly increased out of the product of the week or month for which the laborer is paid. Therefore, the amount of consumable commodities that laborers can buy with their money wages depends chiefly upon *past*, not upon *current* industry. Modern capitalistic production requires time, and the goods in the market this week or this month are largely the products of the industry of past months or even years. If laborers expend their incomes for house rent or for houses or for capital goods, they may draw to a very large extent upon the products of industry for two or three decades past. But money wages expended for such goods as food, clothing, fuel, etc., can command merely the products of the last few months or the last year or so. Therefore, the quantity of such goods secured by the entire laboring class of a country cannot

This is because industry is limited to some extent by capital.

be increased beyond the limits set by the productivity of the industry of the immediate past. It is possible for them to increase gradually as the productivity of a country's industries increases.

§ 284. Economists have recognized that the laborers' "standard of living" sets limits below which general wages cannot fall. The standard of living of the wage-earning classes is the quantity of the necessaries, comforts, and luxuries of life that laborers are accustomed to enjoy. We have already seen that this is a force that limits the growth of population, hence the supply of labor (§ 78). A sudden increase of the labor supply makes the conditions unfavorable for the hired laborers when they make their wages contracts, while a decrease in the supply will make the conditions more advantageous. Changes in the supply of labor tend to adjust general wages to the standard of living.

The limits below which general wages cannot fall.

But the laborers' standard of living cannot influence general wages permanently except as it affects the supply of labor. Now the supply of labor changes slowly, and a whole generation may be needed to effect a considerable change, unless emigration or immigration take place. Leaving these last forces out of consideration for the moment, it is apparent that if wages fall below the present standard of living, the supply of labor will not decrease quickly. Therefore the standard may be lowered temporarily. When this occurs, there is danger that the rising generation of laborers may be brought up on a lower plane of

But the supply of labor changes slowly.

comfort; and, becoming accustomed to it, may not limit their numbers. Then the standard may be lowered permanently.

The influence of emigration and immigration.

If laborers are able to migrate to other places where wages are higher, then it is easier to maintain the standard of living. If wages fall below the accustomed standard, emigration will decrease the supply of labor more quickly and will make it easier to restore wages to the former level. On the other hand, if immigration brings into the country a supply of laborers having a lower standard of living, then it will be harder to maintain the existing standard. In the United States it has often proved true that immigrants have desired to improve their standard of living, and have not tended so much to depress the standard of American laborers. But of many of the immigrants that have crowded into our large cities this has not proved true.

The effect of free land.

Whenever there is an abundance of free land, hired laborers find it easier to maintain a high standard of living. In this country it has been so easy for laborers to acquire fertile land and to engage in farming on their own account, that the supply of hired laborers has been reduced quickly and easily whenever wages have fallen below the income that could be secured from agriculture. In the future, American wages will be less affected by this influence.

Some writers, especially the socialists at the present time, have assumed that the standard of living must

necessarily be low; and that wages tend normally to fall to the very lowest point where the laborers can possibly keep themselves alive and maintain the supply of labor. But this is entirely false; for the standard of living has steadily advanced during the past half-century, and may do so in the future. Its advance depends upon forces that are partly within the control of the laborer. Public education, that broadens the outlook and the interests of the laborer, tends to make him demand broader opportunities, and to refuse to bring into the world children for whom he cannot provide a fair start in life. Moral elevation, and everything that tends to make him more of a man, elevates the standard of his living. The same causes enable the laborers to combine in order to secure by intelligent action all the wages that are their just dues. These facts are appreciated by the working classes as never before, and we may expect a continued rise of the standard of living. Finally, increased wages secured in this manner would not be gained at the expense of other classes in the community. Greater efficiency is a natural result of an improved standard of living, and such an advance in the condition of the laboring classes increases the social income out of which the higher wages must come.

The standard of living may be constantly raised.

§ 285. We must now consider why the wages received by hired laborers differ in various employments. Manifestly, laborers compete with one another as far as possible for the most desir-

Relative wages.

able positions; and it is necessary to explain why this competition does not produce the same rate of wages in all employments.

Laborers in their rivalry with each other compete for those positions that offer the greatest *net* advantages. Other things besides the nominal money income make the competition for any place more or less intense. Besides the nominal wages offered, laborers may consider the question of the continuity or the certainty of employment, preferring lower wages with constant employment. Also they may consider the chances for failure or success in their work. If success is doubtful, competition will be less intense. Furthermore, laborers may consider the agreeableness or disagreeableness of the employment, preferring agreeable work. Natural tastes and inclinations affect their decisions on these points. The varying social esteem in which different employments are held is another important consideration. Finally, the intensity and duration of the exertion, both physical and mental, affect laborers' judgments in such matters.[1] Any employment will appear more or less desirable according to the *net* advantages offered after all these considerations are taken into account.

Competition among laborers is directed toward occupations offering highest "net advantages."

§ 286. It is easy to show that all laborers are not able to enter into competition for the same positions, even if all should estimate the net advantages in pre-

[1] Read ADAM SMITH's account of the causes of differences in relative wages, "Wealth of Nations," Bk. I. Chap. 10.

cisely the same manner. Hired employees are divided into non-competing groups, among which competition is very imperfect or is altogether lacking. These groups are based upon at least five sets of causes : —

Non-competing groups among laborers.

1. Differences in intellectual ability. Some men are unfit for responsible positions, and unable to compete for positions requiring any high degree of intellectual ability.

2. Differences in moral characteristics. In many positions of responsibility the fitness of the employee may depend largely upon his moral character.

3. Differences in training and education, both general and special. General education may increase a man's fitness for many positions, while special training of a technical character must be possessed by all who desire to secure employment as skilled workmen.

4. Differences in physical health, strength, and endurance.

5. Poverty and ignorance. These render laborers unable to learn where better opportunities for employment may be found, and make it difficult or impossible for them to move to the place where more favorable openings might be secured.

Among non-competing groups of laborers a certain competition may exist in the long run, because it may be possible for the children of one group to fit themselves for positions in others. Then, if any group enjoys special advantages, more young persons will strive to enter that trade or profession. Public education is of great importance in

Further considerations.

making possible this indirect competition among different groups.[1] Improved means of transportation and facilities for spreading intelligence tend to increase competition among those persons already located in particular industries. Yet, when all these allowances are made, there remain well-defined, non-competing groups. The lowest groups are the largest, and include almost all unskilled laborers, who are not protected from the competition of their fellows by the possession of special training or skill. Such laborers often have no choice whatever in their work, and must accept whatever comes to hand. Even in the most unhealthy and disagreeable occupations wages are often low because the workers have no alternative open to them. Above these, come groups of skilled workmen separated from each other by the difficulties of changing from one trade to another. Then come the lower grades of persons engaged in labor of a more intellectual character. Finally, there are small groups of responsible brain-workers, possessing unusual abilities and enjoying exceptional training.

The causes of differences in relative wages.

§ 287. We are now ready to explain differences in relative wages. The first thing to notice is that society must pay for a given supply of any commodity or services a price high enough to cover the marginal expenses of producing it. These marginal expenses include the cost for labor, so that we

[1] Trade unions sometimes try to restrict the number of apprentices that enter particular trades. In so doing they tend to obstruct this indirect competition among different groups.

may say that the price of any commodity or service must be high enough to enable employers to pay sufficient wages to secure the highest-priced laborers needed to produce the required supply. Then, leaving the employer out of consideration, we may conclude that the supply of any commodity or service will be so regulated that its price, or its marginal utility to society, will balance the expense of securing the most expensive, or marginal, portion of the labor needed to produce the supply. Relative wages, therefore, are determined by a balancing of the forces of demand and supply.

Forces that determine demand and supply.

In the chapter on value, it has been shown that demand depends upon the marginal utility of the commodity or service to society. It remains to explain briefly the operation of the forces that control the supply of labor available for the production of any particular commodity or service. The supply available is determined by the difficulty of securing men of the ability, character, strength, and training required for the performance of the work necessary to the production of the goods in question. This difficulty will be greater or less according to the following circumstances: —

1. The responsibilities imposed upon workers, and the intellectual and moral qualifications required.

2. The extent of the training, education, and acquired skill that must be possessed by the worker.

3. The intensity of the exertion, whether mental or physical.

4. Agreeableness and healthfulness of the work; also the social esteem in which the laborer is held.

5. In this connection, the student must notice that the family is often the economic unit. When the wife or children are able to enter the trade, and thus increase the earnings of the family above the former level, the wages received by the father are likely to fall, because the expense of securing his services is less than it would be if he were obliged to support the family wholly out of his earnings.

VIII. Profits.

§ 288. Any person who possesses capital, or can induce other people to place capital in his control, may enter almost any line of industry as an organizer and independent manager of business, and an employer of labor. The employer's, or *entrepreneur's*, chances for making a profit from his investment of capital depend upon his ability to produce and sell products for more than he expends in placing them in the market. The expectation of making such a profit induces men to undertake the cares and responsibilities of business management.

The position of the entrepreneur or undertaker.

The investment of labor and capital in any line of production is attended by more or less risk. It is possible that the product of the enterprise may not be in sufficient demand to make the investment remunerative. It is possible that other producers may be able to supply the demand more cheaply. In case a business enterprise fails to find a

The risks of investment.

remunerative demand for its product, or is unable to make a profit by selling at prices as low as those offered by competitors, then the labor and capital invested in it have been misapplied. Every such failure causes a social loss, and it is important to avoid unnecessary wastes of this character. The law throws upon the employer, or *entrepreneur*, the primary responsibility for such losses. People are allowed to establish enterprises only upon condition that they assume the risk of failure. *Entrepreneurs* must satisfy all obligations that they incur before they can secure any profits from their investments. In case of loss, the *entrepreneur* must meet his obligations by drawing upon his capital. By throwing upon employers the risks of business management, society constantly eliminates inefficient managers and places the control of its productive forces in the hands of those organizers who prove themselves most efficient. Society can afford to allow successful managers to make large profits, if, by so doing, it is guaranteed the most effective control and direction possible under present conditions.

§ 289. The profits received by employers may be divided into two classes, namely, *necessary* and *differential* profits. Necessary profits are the minimum returns that society must pay to all the employers needed to furnish the requisite supply of any commodity. If fifty employers are engaged in furnishing the needed supply at a certain price, we know that the price will be high enough to cover the expenses of producing the most expensive

Necessary and differential profits.

or marginal portion of the supply. Any employers who try to enter the business, but are unable to sell at this price, will have to fail and give up their attempts to compete. But the marginal producers, who furnish the most expensive portion of the supply, just manage to get a fair return on their investments. Prices must be high enough to allow marginal employers to secure a necessary or minimum profit. Other employers who produce goods at less than this marginal expense will secure, not only necessary profits, but also a further differential profit that depends upon the differences in their costs of production.

§ 290. The necessary profits received by all employers, even the marginal ones, are composed of two elements. *First*, they include interest on invested capital, computed at the current market rates. If employers could not secure interest on their capital sufficient to cover the difference between future and present income, investments would diminish; and prices of commodities would rise high enough to insure an adequate return to capital. The *second* element in necessary profits is the remuneration for the efforts and trouble that employers incur in the management of productive enterprises. Economists call this element "wages of superintendence," a term that emphasizes the resemblance of this part of necessary profits to the wages of labor. The resemblance is marked because both forms of income are returns for personal exertion. Furthermore, both are governed by the same principle, namely, that the remuneration must be sufficient to cover

Necessary profits.

the cost of securing a sufficient supply of workers. In computing necessary profits, finally, good years must be averaged with bad. Some years a business may yield no profits whatever, or may yield less than necessary profits. In others the returns may be above the minimum rate. But taking a term of years into consideration, we may safely conclude that marginal employers must secure the current rate of interest on their capital and a fair return for their personal exertion.

§ 291. Those employers who produce goods for less than the marginal expense, for which the consumers have to recompense the marginal employers, secure differential profits. These returns are called "pure profits" by some economists. It is the prospect of these extra, unusual gains that leads men to prefer the greater risks and cares of business management to the smaller risks and cares of lending their capital to active managers. The amount of these differential profits depends upon the extent of the advantage which these superior *entrepreneurs* have over the marginal producers. This advantage may arise from the following causes: —

Differential profits.

1. It may come from superior personal ability. The success of a business depends upon able management even more than upon efficient labor. Bad judgment in the purchase of materials or in the sale of the product may make all the difference between success and failure. Thorough supervision and efficient organization of all branches of the business have much to do with success in producing at a low cost. Superior personal ability of

the employer accounts for part of the differential profits secured by some enterprises.

2. The possession of patents may enable an employer to produce at less than the marginal expense, and so to secure a differential profit. In the words of Mr. Mill, "If the value of the product continues to be regulated by what it costs to those who are obliged to persist in the old process, the patentee will make an extra profit equal to the advantage which his process possesses over theirs."

3. Mere chance or good fortune sometimes enables some employers to secure differential profits.

Differential profits are likely to be of a temporary character. The personal ability of the *entrepreneur* may enable the differential profit to continue during his lifetime, but at his death it is likely to cease. We have notable instances of great organizers who have earned immense *personal* profits that were not secured from the businesses after the founders died. Moreover, such personal profits are likely to disappear as soon as other producers succeed in producing at the same cost. This is happening continually. The marginal cost of production steadily falls, and the advantage possessed formerly by superior employers is lessened. In general it can be said that pure profits consist "of wealth created by the powers of given undertakers over and above what would have been produced by the same application of labor and capital under less efficient leadership or management." They are a surplus that does not affect prices, since they are deter-

General considerations on differential profits.

mined by the marginal expenses of production under the least efficient employers that are able to keep in business. "Anger at the great captains of industry on account of the pure profits which they acquire is not only groundless but insane. Rather it is the stupid and unsuccessful undertakers who deserve blame, sinking capital and starving laborers."

§ 292. The profits secured by managers of monopolistic undertakings differ from the profits gained in competitive enterprises. The causes that enable *entrepreneurs* to secure the power to fix prices at the point of highest net returns have been discussed in a previous chapter. These are rare personal abilities, exclusive legal rights and privileges, the monopoly of natural agents, or capitalistic organization. The amount of the profits gained by the monopolist will depend upon two circumstances: — **Monopoly profits.**

1. It will depend upon the amount of his product that he can sell before he reaches the point of highest net returns, at which an increased product would lower prices so that the net profits from his sales would be decreased. This can be expressed in another way. Monopoly profits will depend upon the amount of capital that can be invested in the business before the product becomes so great as to oblige the monopolist to sell it at a lower price than that which yields the highest net returns.

2. It will depend upon the surplus of price above cost on each unit of supply, on the product of each unit of invested capital.

When a monopoly arises, not from rare personal abili-

ties, but from legal rights and franchises, from rare natural agents, or from capitalistic organization, the monopoly profits may be of a permanent character. It is true that new inventions and new business methods may destroy such a monopoly, yet the profits secured from such a business are not personal, and are not due to the skill of one man. For this reason they are sufficiently permanent in character to make it possible to capitalize them and transfer them to other persons. Suppose that patents, rare natural agents, or capitalistic organization enable an employer to realize annually a net profit that exceeds by $30,000 the necessary profits secured by all employers. Then these monopoly profits may be capitalized at the current rate of interest, say six per cent, and the business may be sold for $500,000 more than the actual capital invested in it. There have been many instances in which monopolistic undertakings have been capitalized at from two to five times the actual investment of capital. When the enterprise is of a quasi-public character, such as a gas company or a railroad, monopoly profits are often capitalized in order to conceal the excessive profits realized on the capital actually invested.

Monopoly profits may be of a permanent character.

Since monopoly profits are realized by limiting the supply so that its price can be fixed at the point of highest net returns, it follows that they are a cause of high prices. All consumers pay more than if prices were fixed at the point where they covered the marginal expenses of production, as they are in competitive undertakings. When monopoly

Concluding considerations on monopoly profits.

profits are capitalized and the business sold on the basis of such capitalization, consumers will continue to pay a monopoly price, while the managers of the enterprise will secure only an average rate of profit on their inflated capitalization.

LITERATURE ON CHAPTER XIII.

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CHAPTER XIV.

THE WAGES SYSTEM.

I. General Considerations on the Labor Contract.

§ 293. The hired laborer sells his labor to an employer for a stipulated wage. The legal theory is that labor is property, and that the laborer sells his property to an employer, — just as the owner of any commodity may dispose of his property in a market. In this way labor is called a commodity, and the hired laborer is said to dispose of his commodity, labor, in return for stipulated wages.

The nature of the labor contract.

In theory, the modern labor contract is a free contract, voluntarily entered into by employer and employee. In this country the courts are inclined to insist that this theoretical freedom shall be maintained, and that the law shall not interfere in the purchase and sale of labor more than in dealings in other commodities. They often declare laws unconstitutional that attempt to prevent certain contracts from being made by employers and laborers. Few people realize, however, that the freedom now claimed for the labor contract has not always existed. To consider merely the case of England, it is easy to

Freedom of contract.

show that this has been developed largely during the last century. The Statute of Apprentices aimed to prevent employers from hiring laborers who had not served a seven-year apprenticeship and become connected with some guild, while it prevented laborers from choosing freely their occupations. Acts of Parliament attempted to regulate rates of wages, intrusting the assessment of wages to justices of the peace. These acts were not repealed until 1813 and 1814, although they had been nearly obsolete for some time before. In other words, the modern labor contract is an historical product; it has been modified in the past as it has assumed the present form, and it may be modified in the future.

§ 294. Labor is bought and sold in the labor market in much the same way as any other commodity. But it is possible to show that labor differs from most other commodities in important respects, several of which are here given.

Labor is a special commodity, with peculiarities of its own.

First, it is evident that the laborer and his work are inseparable. The seller of other commodities parts with them when he effects his sale. "It matters nothing to the seller of bricks whether they are to be used in building a palace or a sewer; but it matters a great deal to the seller of labor, who undertakes to perform a task of given difficulty, whether or not the place in which it is to be done is a wholesome and a pleasant one, and whether or not his associates will be such as he cares to have." Since the worker is inseparable from his work, he is concerned in the conditions of his employment. The person who

The laborer is inseparable from his commodity, labor.

buys has to exercise necessarily some control over the person who sells labor. The buyer determines the question of residence and the place of work, to a very large extent. He has more or less control over the companions and all the surroundings of the laborer during working hours. This extends to circumstances that affect the health of the worker, such as sanitary conditions, and to those that may affect his safety, as in the case of machinery that endangers both body and life. Finally, the labor contract involves a large degree of control by the employer over the length of the working day and the time of beginning and ending work.

Labor resembles a perishable commodity.

In the second place, labor resembles a perishable commodity which the seller is likely to be obliged to dispose of in a forced sale. The hired laborer commonly has small reserve funds upon which he can depend for support, and is obliged to sell his commodity *at once* for whatever price may be secured.[1] "The seller of any other goods, by the very fact that he has them to sell, has some capital upon which he can live while he is trying to make a satisfactory contract." Even if the goods are perishable, the seller has his labor to fall back upon as a means of support, while the laborer has merely his labor between him and starvation. Since the individual laborer is normally in the position of a man obliged to make a forced sale, he is at a disadvantage in making the labor

[1] Moreover, the laborer who loses a single day's employment is usually unable ever to recover that lost opportunity. This is often true of capital, however, so that this peculiarity is not confined altogether to labor.

contract. Furthermore, poverty, and sometimes ignorance, may prevent him from seeking the most favorable markets. A laborer, especially if he has a family, finds it difficult to take his commodity, labor, to distant markets where wages are higher.

A third peculiarity is connected with the one first mentioned. The supply of labor changes very slowly, and only through changes in the number of laborers. The supply of other commodities can be decreased by stopping production. But it is far less easy to decrease the number of laborers when falling prices lead to a partial suspension of productive industry, and throw many men out of employment. When a decreased demand for labor causes both low wages and lack of employment, then large numbers of unemployed laborers press into the market and bid for work. Thus a decreased demand may bring an increased supply of labor into the market. On the other hand, when demand begins to increase after a period of hard times and low wages, a "reserve army" of certain unemployed laborers, "which the poor-houses at the expense of the whole population had supported . . . as long as dullness in the business continued," presses into the labor market and increases the supply. The price of labor cannot rise greatly as demand increases until this army of unemployed has been taken back into the ranks of industry.

The supply of labor changes in a peculiar manner.

§ 295. Although in theory the labor contract is a voluntary agreement freely entered into by employer and laborer, the economist finds reasons for believing

that this freedom is often more nominal than real. He finds that the peculiarities of the commodity, labor, are such that the individual seller is likely to be at a disadvantage as compared with the buyer, so that there may be no real freedom or equality in contracts for the sale of labor. An extreme instance of this is found in the case of a demand made that certain English mines should be inspected in order to prevent the recurrence of terrible accidents. The representative of the mine owners asked, "Is it not at the pleasure of the miners whether they go into the mines or not?" "Certainly," was the answer of the witness, "but it is not at their pleasure not to starve if they do not go into the mines." When laborers have to make a forced sale of their labor, their freedom of contract is more nominal than real. When women and children stand individually before the manager of hundreds of thousands of capital, it is possible that there may be little freedom and less equality in the contract by which they sell their services. The public has become dimly conscious that between two parties of such unequal knowledge, resources, and strength as a single laborer and the employer of a hundred workmen, the wage contract cannot be entirely equal and free. As a matter of fact, the character of the contract has been appreciably altered in several directions, in order to secure greater equality of conditions between the contracting parties. In legislation and in actual practice alike we have realized that "there is no greater inequality than the equal treatment of unequals."

Nominal and real freedom in the labor contract.

II. Labor Laws and The Labor Contract.

§ 296. When the Industrial Revolution necessitated the repeal of the old regulations by which English industry had been restricted, employers and individual laborers were left free to settle their mutual relations by a labor contract that was legally free. But such unrestricted freedom of contract soon produced some of the most terrible effects recorded in economic history. Women and children were forced to work in factories and mines under conditions that proved destructive of body and soul. Hours of labor were prolonged beyond the most extreme powers of human endurance, and no care was taken to protect the operatives from the most dangerous accidents. In 1802 Parliament passed the first of a series of Factory Acts, which gradually restricted the freedom of the labor contract. These laws were consolidated and systematized in 1878, and have been extended since that date. They have restricted the hours and conditions of employment of women and children, prohibiting the employment of children under a certain age, and preventing both women and children from contracting to work under improper conditions. Suitable ventilation and sanitation of factories have been required, and employees have been protected to some extent from injury by dangerous machinery. These laws applied at first only to women and children directly, not to adult males. At the present day there is less interference with labor contracts made by men. Yet acts prohibit-

Restriction of the labor contract by legislation.

ing "truck" payments,[1] regulating the payment of seamen's and miners' wages, and the employment of all workers in certain dangerous trades, have seriously restricted labor contracts of adult males.

Labor legislation in the United States.

In the United States there has been, on the whole, less restriction of the labor contract. Still many states, particularly in the Northeast, where manufactures are further developed, have passed such acts. We have laws requiring proper sanitation, ventilation, and protection of employees from bodily injury. "Truck" payments have often been prohibited. The employment of children under a suitable age has been prevented in some cases, while the hours of employment of women and children have been limited to eight or ten in certain states. In this movement Massachusetts has taken the lead.

General considerations on such restrictive legislation.

§ 297. The student should be reminded, first of all, that many of the evils at which these laws are directed existed before the present era of capitalistic production. The growth of the factory system served partly to bring them to light, although it certainly did a great deal to intensify some of them. It will be seen that the fewest regulations have been placed upon labor contracts made by adult males. This has been because men have been considered to be better able to make equal contracts with employers, while women and children have been thought to need

[1] "Truck" payments are made in commodities supplied usually by stores kept by employers. They have often been resorted to as a means of robbing laborers by charging exorbitant prices that virtually reduced the real wages received.

more protection. These restrictions have been based upon the principle that wage-earners are not able to contract with their employers on entirely equal terms concerning those conditions of employment that restrictive laws have sought to regulate. As a matter of fact, we must admit that the nominal freedom of the labor contract has been decidedly abridged as a result of this legislation.

Varying decisions of the courts.

In this country the courts have often declared these labor laws to be unconstitutional, sometimes upon the ground that they have infringed upon the right of free contract. But there has been a lack of agreement in the decisions of the courts of the various states. Some courts uphold laws that others have declared unconstitutional, and judges in different states have declared the same laws unconstitutional on totally different grounds. Only a part of these conflicting opinions can be explained by differences in state constitutions, and the layman is rather driven to the conclusion that these particular questions of judicial interpretation depend largely upon latitude and longitude. In the long run it seems probable that the courts will uphold as much of this legislation restricting the labor contract as proves to be necessary to obviate evil results that are seen to occur from the practical inequality of the individual laborer and employer. Here, as in other cases, the courts will find ways by which they can uphold the constitutionality of legislation that experience shows to be necessary.

III. Labor Organizations and the Labor Contract.

§ 298. Modern labor organizations are combinations of hired laborers. They have developed naturally out of the sharp separation of the laboring and employing classes caused by modern capitalistic production. As the distance between the employer and the hired worker widened, it was inevitable that laborers should realize the need of combining to protect and advance their interests *as a class*. In England the growth of labor organizations was more rapid than in this country, and the English trade unions are much further developed than the American.

Development of labor organizations.

The earlier organizations, or trades unions, were composed chiefly of skilled workmen, and were organized in separate trades or crafts. They seldom acted together, and had little sympathy for unorganized or unskilled laborers as a class; but sought rather to further their own immediate interests. The more recent organizations are represented in this country chiefly by the Knights of Labor, and in England by the "new trade unionism." They seek to unite all hired workers, skilled or unskilled, and to improve the condition of the entire class of wage-earners. Perhaps they show, also, more of a disposition to institute political movements in behalf of their class. More recently still, in this country, the trades unions and Knights of Labor have copied each other's policy to some extent. The trades unions have formed central labor unions in cities, in which unions of different crafts

Two types of labor organizations.

have joined in common action. Then they have established the American Federation of Labor, a national combination of trades unions. Meanwhile the Knights of Labor have formed district assemblies composed of laborers organized by separate crafts. The American Federation of Labor and the Knights of Labor have not as a rule worked in harmony. The number of organized laborers in the entire country is seldom estimated at less than one million.

§ 299. The objects of labor organizations may be classified in the following manner: —

Objects of labor organizations.

1. By regular assessments upon their members they raise large sums for the purposes of the associations. These funds often are employed in insurance and benefit schemes, by which sick, injured, or unemployed members are assisted. In 1893 it appeared that 682 English trades unions disbursed $10,928,076, of which sum fully one half was employed in this manner. The possession of this property makes these unions more conservative and more responsible organizations.

2. They aim to educate laborers in various ways, and to promote culture and social intercourse among their members. In their debates and the administration of their affairs, members often secure valuable training.

3. They frequently encourage coöperative enterprises among their members, and desire to promote self-employment.

4. They sometimes enter into political movements, and thus influence much labor legislation in their favor.

5. Finally, they aim to secure *practical* as well as *nominal* freedom and equality in the labor contract. For this purpose they seek to control the supply of labor in two ways: *First*, they assist laborers to move to less crowded labor markets when the supply becomes excessive. *Second*, they may try to control the future supply of labor in particular crafts by restricting the number of apprentices admitted into each trade. More than this, they seek to secure collective bargaining with employers. This subject requires more detailed treatment.

§ 300. Perhaps the most important single feature of labor organizations is their effort to substitute collective bargaining between employers and associations of employees for contracts between employers and individual laborers. They believe that a single worker is usually at a disadvantage in making a contract with his employer, while an organization of laborers can drive a more equal bargain. Experience has shown that this is so. Organized laborers can refuse to make a contract on terms deemed unjust, because they can fall back upon the funds of their unions in case they lose an opportunity to work. This makes it less necessary to sell their labor at a forced sale, for it enables them to hold out for better terms. Secondly, labor organizations can prevent their own members from taking the places of those who refuse to accept the terms offered by employers, while often they dissuade outside laborers from doing so. This has compelled employers to offer better terms.

Collective bargaining.

Organized laborers can, therefore, utilize the strike as a means of securing better terms. Manifestly, strikes are evil in themselves, since they cause loss both to employers and laborers; while they arouse bitter contests of strength, and often inconvenience the public. They may be defended only when they are the sole alternative to yielding to unjust terms offered by employers. Many strikes have been unwise and unjust; many others have been thoroughly justifiable. They are most likely to succeed in prosperous times, "upon a rising market." Sometimes, if employers have engaged to complete large amounts of work within a certain time, the laborers may force a contract in which the employers are at a positive disadvantage. From January 1, 1881, to June 30, 1894, it appears that 14,390 strikes, involving 69,167 establishments, occurred in the United States. In 44.49 per cent of these establishments the strikes succeeded, in 11.25 per cent they were partially successful, while in 44.23 per cent they failed.[1] Even when strikes fail, the knowledge that the employees are able to strike again may secure more favorable terms to laborers, without the necessity for future occurrences of this sort. The boycott is a second weapon. It is "an organized attempt to coerce a person into compliance with any demand, through a combination pledged to abstain, and pledged further to compel others to abstain, from having social intercourse with him or to trade with him." Boycotts

Strikes and boycotts.

[1] Bulletin of Department of Labor, i. 10, 20. Washington, Nov. 1895.

are more objectionable than strikes, because they are more likely to cause interference with the rights of persons who are not directly connected with the original dispute. Yet if producers can be induced to place union labels upon their goods voluntarily, there is no reason why laborers, or any other consumers, should not purchase such products by preference.

The legality of strikes and boycotts.

Mr. Stimson thinks that strikes, in themselves, have never been illegal in the United States.[1] Laborers have had the right to combine to raise wages by lawful means. But when they have combined to perform illegal acts, or when the primary motive of their combination has been to inflict personal injury, then they have been held guilty of conspiracy. In the case of the boycott, the courts have been inclined to hold that the primary purpose is to interfere with the business of others rather than to raise wages. Probably most people will agree that "the boycott is not the remedy to adjust differences between capital and labor," at least when enforced by coercion. In general it can be said that the law now leaves laborers free to combine to enforce their demands by any methods that do not conflict with the rights of others. Those who criticise labor organizations so freely for their use of strikes and boycotts, commonly overlook the fact that other classes of society use pre-

[1] In England the case was different. Early in this century legislation and the courts were opposed to the simplest combinations to raise wages. For this offence six laborers were transported into penal servitude as late as 1834.

cisely the same weapons. Between January 1, 1881, and June 30, 1894, there were lockouts in 6,067 establishments in the United States. In these cases, employers, either individually or in combination, locked out 366,690 employees in order to coerce them into compliance with dictated conditions. The boycott has long been used by many people. "The abolitionists boycotted slave-made products; the temperance people have used the same method to repress the liquor nuisance; the pulpit has tried hard to boycott Sunday newspapers; and recently there has been established in the city of New York a society, consisting of women occupying excellent social positions, pledged not to purchase goods of houses which do not furnish proper conveniences for their saleswomen. Railroad companies have boycotted their men time and time again; working people have boycotted railroads, dealers, and manufacturers; railroads combine and boycott other railroads; and so the method has grown to be a familiar one with all classes, and one that is used in various ways."[1] No device of industrial warfare is more cruel than the form of boycott known as the "blacklist."

§ 301. Manifestly, the labor contract is greatly modified whenever combinations of laborers are able to induce or coerce employers into making terms primarily with the labor unions, rather than with the individual employees. This is a matter to which employers commonly offer serious objections. When labor organizations adopt a

Labor organizations have modified the labor contract.

[1] WRIGHT, Industrial Evolution of the United States, 319.

conservative policy, and choose men of ability, integrity, and character to represent them, employers are much more willing to treat with representatives of unions. Many capitalists have recognized the advantage of dealing with a responsible, conservative union, rather than with irresponsible workingmen. In England, where trades unions are better organized and more wisely managed, employers show much less disinclination to deal with them. Many careful thinkers and practical business men will assent to Mr. Stimson's opinion that "collective bargaining between associations legally organized and personally responsible on both sides . . . holds the future of the peace of labor." When American labor organizations become more willing to assume responsibility for the acquiescence of their members in the agreements made by the unions,[1] and when they more generally place their best and wisest men in control of their affairs, employers will not long refuse to deal with them. Some zealous advisers of laborers urge upon them that they lose their personal independence by entering a union, by whose rules they must thenceforth be bound. The student will have no difficulty, however, in recognizing that wisely managed labor unions can increase the *practical* freedom of contract enjoyed by the employee, even if his *nominal* freedom is restricted by the rules of the association.

[1] The English unions accomplish this by their better discipline and leadership, and especially by means of their benefit funds, in which a disobedient member loses his share if he leaves the association.

§ 302. Labor organizations have often made mistakes and pursued short-sighted policies, as willing critics are fond of pointing out. Some of the criticisms commonly passed upon them need to be considered.

Other aspects of labor organizations.

1. They are called monopolies, and this is often true. For unions frequently seek to limit the number of apprentices in particular crafts, and to limit the supply of labor. Such measures may injure laborers in other trades by causing an oversupply there. These regulations may be considered legitimate methods of industrial warfare whenever employers seek to get all their work done by apprentices, by discharging a workman as soon as he completes his apprenticeship, or when they try to keep large numbers of unemployed workmen in reserve in order to keep wages down.

2. Labor unions sometimes limit the amount of work that their members may perform in a day. This is done with a view to making work for a larger number of laborers. Such action is very short-sighted, because a limitation of production simply decreases the social income available for all persons, laborers included. It may be compared with the action of monopolies in decreasing production, in order to cause scarcity and raise prices.

3. The members of labor organizations often treat non-union men harshly and even cruelly, and interfere with the undoubted rights of laborers who are not members of unions. It is natural that members of unions should feel resentment at outsiders when they play into

the hands of employers, but this does not justify interference with the rights of persons that do not desire to join labor organizations. On the other hand, employers frequently discriminate against members of labor unions, and have combined to boycott them on a large scale. A favorite method of breaking down labor organizations is to discharge the men who take prominent parts in them. Labor organizations act within their undoubted rights when they resist by lawful means the replacement of their leading members by non-union men.

4. Finally, it is said that labor organizations are based upon the principle of strife and cause industrial warfare. "In the minds of a large section of the public, labor unions are chiefly associated with strikes. It is believed by many who ought to know better that such organizations exist for the purpose of striking, and that if the organizations were suppressed, industrial peace would be secured." [1] The truth is that labor organizations exist primarily to equalize the terms of the labor contract. In the early history of any union the strike has been used frequently as a means of accomplishing this end. In the long run, however, labor organizations grow more conservative and less disposed to strike, while their power and influence increase so that employers are more inclined to offer fair terms, thus making strikes unnecessary. So long as the labor contract depends rather upon the relative strength of the contracting parties than upon considerations of exact justice, there is bound to be more or less strife between laborers and capitalists.

[1] HADLEY, Economics, 353.

This is not an entirely satisfactory condition of affairs, but only half of the responsibility for it rests upon the laborers. In the future, collective bargaining may reduce this strife to a minimum.

IV. The Unfavorable Relation of Laborers to the Product of their Labor.

§ 303. Experience has shown that laborers receiving time wages are likely to have little interest in turning out a large product, except what comes from the knowledge that they will lose their positions if they are too inefficient. Piece wages may give the employee a greater incentive to diligent work. But they have often been used by employers as a means of getting employees to do more work, and then the rate of wages per piece has been reduced; so that laborers have had to do more work in order to secure the same wages that they formerly received under a time wage. Such experiences have inclined workers to look with suspicion upon the proposal to adopt piece wages, and have led them to refrain from increasing their efficiency under the system. It is not too much to say that, under the average conditions of time or piece wages, laborers do only seventy or ninety per cent of the work that they could reasonably do, if furnished with a sufficient incentive.

Time wages and piece wages.

§ 304. Some employers have realized that their laborers did not work up to their highest efficiency under the ordinary methods of paying wages, and have adopted various systems of *progressive* wages.

Progressive wages.

Under these methods the employees have been guaranteed a minimum time wage; and have been offered a premium for attaining more than a certain degree of efficiency, — that is, for exceeding a certain amount of work each hour or day. It is impossible to present here the details of these experiments with progressive wages; but, when they have been introduced in good faith by employers, it has been found that the average product of each worker has increased largely, occasionally as much as eighty or one hundred per cent.

§ 305. Progressive wages have served to increase the laborer's efficiency, but they have not avoided entirely disputes between employers and employees.

Profit sharing. Profit sharing is a plan for giving the laborer an inducement to work efficiently, and for securing greater harmony of interest between employers and workmen. Under its provisions hired laborers are given shares in the profits of the business, the share of each workman being determined beforehand upon some equitable basis. The purpose of such an arrangement is to induce laborers to increase their output, improve its quality, and thus contribute toward the creation of extra profits in which they may share. In some instances experiments in profit sharing have had this result, and have proved at least moderately successful. But in many cases they have proved unsuccessful, and have been given up. A common reason for such failure is that there have been very small profits to divide, or even no profits at all; so that laborers have had little interest in the scheme, and have not hesitated to strike if there

was any prospect of immediate advantage resulting from such a course.

Experience has shown that profit sharing does not do away with strikes, although in some cases it has promoted a better understanding and feeling between employer and employed. Concerning its merits as a plan for distribution, the following points may be noticed. If the share of profits received by laborers is created by increased efficiency and exertion on their part, then it may be as favorable to efficient production as systems of progressive wages, but hardly more so. Unfortunately, however, the profits actually realized by a business depend so much upon good management by the employer that their amount may not vary proportionately with the increased zeal and efficiency of the workers. Laborers may increase their product ten per cent, but bad business management may result in an actual loss on the sales. In such a case profit sharing may be unjust to the employee. On the other hand, if the profits received by the laborers are merely a gratuity from the employer, then the system is unfair to him. For laborers would be made to share in any profits earned by the business, while they would bear no share of the losses. In conclusion it may be said that profit sharing has accomplished less than its more ardent supporters have expected.

Merits of profit sharing.

§ 306. Coöperation, in the technical sense, has had two distinct forms. *First*, consumers have combined to conduct the exchange of products, that is, wholesale and retail trade, in order to save

Coöperation.

the charges made by middlemen. In England many successful coöperative stores have been established, but in this country they have been less numerous and important. To this form of coöperation the name consumers' or distributive coöperation has been given. The *second* form is productive coöperation. Workmen have combined to establish and conduct productive enterprises upon their own account. They may contribute nearly all the capital, or may borrow a part; but they become their own employers and form a collective undertaking. Productive coöperation has had little success in England, but rather more in France; while a few such enterprises have succeeded in the United States.

The merits of productive coöperation.

Manifestly, productive coöperation is a radical change from the present organization and supervision of industry by individual *entrepreneurs* employing large numbers of hired laborers. In some few cases where it has succeeded, its advantages have been very great. It has made impossible strife between employing and laboring classes. Self-employed workers have shown activity and zeal in their labor that hired laborers do not exhibit. It has encouraged frugality, since it furnishes a strong inducement to saving. Finally, the responsibility and experience of proprietorship have had an excellent moral influence upon the coöperators.

In coöperative production the place of the *entrepreneur* is taken by a manager elected by the workmen. Now, it is all-important for the success of the enterprise that the manager shall have the same skill that indi-

vidual *entrepreneurs* possess. If he fails to show sufficient ability, the business will prove a failure. Coöperators are not inclined to pay enough to keep the most able men in their service, so that if a successful manager is found they are likely to lose him. Moreover, differences of opinion among coöperators are likely to cause dissensions that lead to divided counsels and inefficient management. Coöperative production has succeeded best when the business has not been of a complex character, when skillful management has counted for less, and efficient workmanship has availed more. Finally, laborers have seldom had sufficient capital and credit to enable them to secure the means of establishing large enterprises. These difficulties have generally circumscribed narrowly the field where coöperative production could prove a success. The conclusion seems warranted that coöperation is an ideal system when possible, but that the difficulties attending it are so great as to make it impossible for us to expect very much from it in any immediate future. The *entrepreneur* will continue to organize and direct the large majority of business enterprises, for he seems able to insure to society the most efficient direction of its productive forces.

Difficulty of successful coöperative production.

V. Conciliation and Arbitration.

§ 307. In contracts for the sale of ordinary commodities, disagreements between bargainers seldom lead to conflicts between the contracting parties. But the labor contract is peculiar in that the person of the laborer

and his work are inseparable. Human interests are involved in an especial degree in changes of the supply of labor, and in all the conditions of employment subsequent to the conclusion of an agreement between employers and laborers on the matter of wages. Hence it is easy for the conflict of interests to become serious when differences arise between the parties to the labor contract. Laborers resort to strikes and boycotts; employers adopt the lockout and the blacklist. When such disputes occur they are settled usually by a trial of strength between employer and employees; and, since might, not reason, is appealed to as the usual arbiter, conflicts between laborers and capitalists are justly described as "industrial warfare."

The labor contract and industrial warfare.

§ 308. Few persons are satisfied with appeals to force as the principal method of adjusting the relations of laborers and employers. One remedy for the present unsatisfactory relation has been found in boards of conciliation voluntarily established in various trades. Employers and laborers in the same trade have selected representatives to form a committee, or board, before which all differences shall be brought for calm and fair consideration before they can lead to serious disputes. When this expedient has been fairly tried in good faith, it has been found that nearly all disputes can be settled by the boards to the ultimate satisfaction of both parties. Both employers and laborers have taken care to avoid mistakes, and a fair settlement, even of questions of wages, has usually been

Industrial conciliation.

possible. Strikes or lockouts have often been avoided for long periods of years. Voluntary boards of conciliation have demonstrated that it is not impossible to reconcile conflicting claims of laborers and employers on a basis of reason and justice, without appeals to trials of strength, that is, appeals to force; they have proven that most labor controversies are unnecessary, arising in misunderstanding and distrust, rather than in the desire of either party to wrong the other; while, finally, they have shown that mutual respect, confidence, and good-will may prevail between employers and employed, in place of the mutual distrust and even class hatred that too often characterizes their relation at present.

§ 309. When disagreements between employer and employee lead to an open rupture, such as a strike or lockout, disputes have sometimes been submitted to arbitration by unprejudiced judges. **Voluntary arbitration.** Sometimes when boards of conciliation have failed to agree on a certain subject, it has been submitted to the decision of some umpire or arbitrator. In this country several states have established boards of conciliation and arbitration, which are generally authorized to investigate any dispute between laborers and employers, and to offer their services in securing a settlement. In Massachusetts this method has been found quite successful in settling many disputes; but the board has done its best work in the field of conciliation, where it has secured the settlement of many questions that might have led to strikes and lockouts. Arbitration voluntarily accepted

by the parties to the dispute is the wisest and most advantageous method of settling differences when a strike or lockout has actually occurred. But it is altogether desirable to prevent, by conciliation, the disturbance of friendly relations between employers and laborers.

§ 310. It has been proposed to compel by law the adjustment of labor controversies by arbitration. Compulsory arbitration of this character presents serious difficulties. The first is that, while it is easy to enforce the decision of the arbitrators upon the capitalist, it is generally impossible to compel the laborer to abide by it permanently.[1] To remedy this difficulty it has been proposed to have labor organizations incorporated, so that judgments can be enforced against them. But this proposition is not at present widely favored by laborers. In the second place, if laborers could be compelled to work at wages fixed by arbitration, it is questionable whether they would render willing service, and whether their labor would not prove as inefficient as slave or prison labor. Finally, it is claimed that capitalists would not invest their capital under any such condition as compulsory arbitration of labor disputes. This is a favorite answer to any proposal for limiting the powers of capitalists. Capital *must* be invested, and only a small portion could flow out of the country. It is possible, however, that com-

Compulsory arbitration.

[1] It is easy to find enough property belonging to the employer to enable the judgment of the arbitrators to be enforced upon him. With laborers this is seldom possible, while imprisonment would probably be an impossible punishment for a refusal to work under unsatisfactory conditions.

pulsory arbitration might be enforced in an unjust manner that should prove destructive to the interests of employers. This would discourage the growth of capital and check the development of industry. If, on the other hand, compulsory arbitration should be fairly administered, there is no reason to fear that the capital of society would be impaired. Most people will agree that compulsory arbitration would be such a serious limitation upon the labor contract that it must be considered undesirable as long as there are other possible methods.

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CHAPTER XV.

LAND NATIONALIZATION. SOCIALISM.

I. Land Nationalization.

§ 311. About 1870 a movement in favor of land nationalization started in England. The Land Tenure Reform Association advanced the proposition that the State should take by taxation all, or nearly all, of the future increase of the rent of land. Present landowners were to have the option of "relinquishing their property to the State, at the market value which it might have acquired at the time when this principle may be adopted by the Legislature." The Association claimed that its proposal was just and desirable because the growth of ground rent (the economic rent of land in the strictest sense, apart from improvements made upon it) is due to "the growth of population and wealth," "without any effort or outlay by the proprietors."

The English Land Tenure Reform Association.

§ 312. More recently, Mr. Henry George has started an agitation in favor of the seizure by the State, not merely of the future "unearned increment" of land rentals, but of the entire economic rent of land. He would accomplish this end by imposing upon land a single tax equal to its

Henry George and the single tax.

annual economic rent; that is, its rental value apart from all improvements. Moreover, he has denied the justice or necessity of compensating landowners by allowing them to sell to the State their lands at the market value. It is evident that such a plan is equivalent to national ownership, or nationalization of land.

§ 313. Mr. George is not a socialist. He believes that men should have the right of property in all products of their labor. But he denies that the economic rent of land is the product of any activity of the landlord, and claims that it is due entirely to the growth of population, which increases the demands made upon the land, and raises rents. His arguments depend upon this fundamental proposition, and we may present them in the following manner.

The arguments advanced by Mr. George.

1. All social progress increases the demand for land. The law of diminishing returns[1] drives investments of labor and capital onto poorer margins, and increases rent. Thus the tendency of progress is to give landlords more, leaving less for all other people. Therefore, progress will always cause poverty as long as land remains in the hands of private owners. There are two fallacies in this argument. First, *all* social progress does not increase the demands made upon land. The improvements in manufactures of the last century have

[1] Mr. George formally denies the law of diminishing returns (see "Progress and Poverty," Bk. II., Chaps. 3 and 4). But he undertakes to demonstrate the invariable connection between progress and poverty by means of Ricardo's law of rent, — a law based upon the assumption of the law of diminishing returns, and meaningless upon any other assumption.

increased enormously the product secured from each acre. Improvements in agriculture constantly enable the supply to be produced from better grades of lands, throw poorer grades out of use, and decrease rents. Improved means of transportation enable the best grades of lands in all parts of the world to be utilized, and they have reduced rents on older lands. The progress of the last century has notably increased rents only in the case of land especially desirable for use in commerce and transportation, and this mainly in large cities. The second fallacy is that of supposing that, in any case, the demand for land can increase indefinitely, and can throw most of the product into the hands of landlords. The growth of population, which is the principal cause of an increased demand for land, is limited by the desire of men to maintain their standard of living, or even to raise it. Beyond the point set by the standard of living, population, and hence this principal demand upon land, will not increase.[1] Our first conclusion was that progress does not necessarily increase, on the whole, the demands made upon the land, although it may enormously increase the demands made upon favored situations. Our second conclusion must be that population, hence the principal demand upon the land, can never

[1] This point is worked out more fully in ELY, "Outlines of Economics," 175–176. Furthermore, BÖHM-BAWERK has called attention to an equally important fact. "Just as effectually as the claims of the worker may and do prevent cultivation being extended to a point at which labor does not obtain even its own costs of subsistence, may the claims of capital prevent an excessive extension of the limits of cultivation, and actually do prevent it." See "Capital and Interest," 93–94.

increase beyond the point set by the claims of capital and by the desire of laborers to maintain their standard of living. Nothing could be more incorrect than the theory that rents paid to landowners are a necessary cause of poverty, attending all social progress.

2. Mr. George holds that a single tax, equal to the rental value of all land, apart from improvements, would yield more than enough to support the government, and would make all other taxation unnecessary. His scheme would secure for the uses of society that part of the product of industry that landowners now acquire as a result of social growth and development. He holds that all other taxes discourage capital and labor, but that the single tax on land would not discourage industry. It is impossible to determine exactly how much the single tax would yield in the United States, and we cannot say certainly that it would yield more or less than enough to cover the expenses of our governments, national, state, and local. But on financial grounds, which cannot be enlarged upon here, any single tax is highly objectionable, and is condemned by all authorities.[1]

3. Mr. George urges very strongly that it is unjust to allow any persons to own the land, which is a free gift of nature to all men. All people should have an equal opportunity to use the land, and landowners infringe upon this natural right. Since private ownership of land

[1] See BASTABLE, "Public Finance," 312–319; PLEHN, "Public Finance," 105–110; ELY, "Taxation," 88, 89; SELIGMAN, "Essays in Taxation," 73–75.

is wrong, it is not necessary to compensate present owners, especially since so many existing titles to land were based originally upon violence and robbery. Modern writers, however, have practically given up the attempt to define "natural rights." They hold that all of a person's rights are based upon considerations of social utility, and, therefore, consider the justice of landownership to be a question of social utility. As a matter of fact, most of Mr. George's arguments aim to show the injurious effects of landownership.

§ 314. In studying Mr. George's plans for land nationalization, the following considerations are important:

Special considerations concerning land nationalization.

1. In one sense of the word, economic rent may be called an unearned income; yet it accrues mainly to people who incur the risks of investing in land, and cannot be secured without the exercise of foresight. Now, Mr. George assumes that such investors never lose, but always gain. This is far from true, as has been pointed out (§ 276). At present, investors run the risk of loss when they purchase land and improve it. This risk is counterbalanced by the prospect of an increase in economic rent. Mr. George would have the State appropriate all such increments of economic rent, while investors would bear all the losses on improvements that should become unprofitable on account of changes in the direction of the growth of the community. The late President Walker said, justly, "Heads I win, tails you lose, is not a game at which the State can, in fairness or decency, play a part." If the State takes from

an investor all increments of rent due to social causes, it should guarantee him from losses on capital invested in improvements, provided that those losses result from social causes over which he has no control.

2. As a revenue measure, the single tax would often prove a disappointment. In England, for instance, the rents of practically all agricultural lands have steadily fallen for more than twenty years. If the English government had bought out all owners of agricultural lands at the time when The Land Tenure Reform Association proposed such a course, it would have made a decidedly bad investment. In many states of our Union the same thing is true of agricultural rents, while it has occurred repeatedly in cities.

3. We must admit that a large unearned increment of ground rents is secured by the owners of specially favored lots. No one would question the justice of imposing a part of the burden of taxation upon such an income;[1] but we should not forget that there are other unearned incomes besides those secured from some pieces of land. When a monopoly of any sort develops an unusually profitable field of investment, part of the monopoly profits are an unearned income, and should

[1] Most writers favor heavier taxation of economic rent, and lighter taxation of improvements, particularly in cities where the two things can be separately estimated with ease. The common practice of taxing unimproved land for only a very small percentage of its market value is bad. It places a premium upon withholding land from use, and waiting for a rise in its value. It discourages the improvement and use of such land, because the assessment of the land itself is raised as soon as improvements are made.

be taxed also. As a simple matter of fact, all those persons who have the good fortune to be favorably affected by each actual turn of social development are likely to receive unearned incomes. It is just to tax all of these incomes whenever they can be reached with certainty; but to tax them all away is quite a different matter. Finally, in the United States, there are practically no restrictions upon the purchase or sale of land. Any unearned increment is likely to be distributed quite widely, because landownership is widely extended.

4. Mr. George's plan of confiscating the value of land without compensating present owners does not appeal to the conscience of the average American as just. Society has allowed private landownership in this country ever since English settlement. The present owners have invested in land in good faith. If it should be decided inexpedient to continue our present system, the burden of the change should not be thrown upon the single class of landowners.

II. Socialism.

§ 315. "Socialism is that contemplated system of industrial society which proposes the abolition of private property in the great material instruments of production, and the substitution therefor of collective property; and advocates the collective management of production, together with the distribution of social income by society, and private property in the larger proportion of this social income."[1]

Definition and explanation of socialism.

[1] ELY, Socialism and Social Reform, p. 19.

Four important features common to all socialistic schemes are contained in this definition of Prof. Ely's.[1]

The four cardinal elements of socialism.

1. Socialists desire common or social ownership of land and productive capital, the important material factors of production. This would require the abolition of private ownership of these forms of property, as allowed by our present laws. Some socialists have favored the compensation of present owners of land and productive capital; others deny the justice or necessity of doing so.

2. Socialism means, in the second place, the organization and management of productive enterprises by society. This means, of course, management by government, either as constituted at present or as reformed under the socialistic *régime*. Mr. George, who favors the nationalization of land, would leave the management of industrial enterprises to private individuals. Socialists hold that private management of industry leads to disastrous results. Under socialism, persons engaged in productive industry would become practically government employees.

3. In the third place, socialism means that the social income shall be distributed among individuals by the authority of the government, and according to some plan that will secure a just distribution of wealth.

4. Finally, socialism would allow private property in the incomes received by individuals from the government. Part of the income of society would be reserved

[1] It must be understood that this explanation aims at essential features merely, and has special reference to the modern forms of socialism.

by the government for public purposes, as is done at present by our systems of public revenues. In our highways, parks, libraries, and schools, individuals receive at the present a considerable portion of their real incomes out of a common fund.

Ambiguous use of the term "socialism."

It is possible to call any form of governmental activity socialistic. Our post-office is a socialistic institution in this sense of the term, and any person who prefers national to private ownership of the post office is a socialist, *to that extent.* Municipal ownership of water works is socialistic, and hundreds of our towns and cities have adopted this form of socialism. Those who are properly called socialists differ from the rest of us, who oppose their projects, simply in the *extent* to which they favor social ownership and management of industrial enterprises. The term "socialist" is ignorantly or dishonestly applied as a term of reproach to any one who proposes that the government shall assume control of any new classes of enterprises. People have ceased to be scared by the mere name of socialism. In the broad sense of the term, we are all socialists. Technically, however, socialism should mean the proposal to adopt social ownership and management of all important productive enterprises, leaving practically nothing to private initiative. Few people in this country favor such a policy at the present time.[1]

[1] In order to avoid the reproach considered to accompany the word "socialist," the name of "nationalist" has been adopted by many persons in this country who favor socialism. In Europe the word "collectivism" is used.

Socialism must not be confounded with anarchism. The anarchist believes that all control or coercion of one individual by another is wrong; that government implies such control, and is necessarily a bad thing; and that the worst traits of human nature have been caused by the repressive influence of government. Therefore anarchists desire to overthrow all governments. With these abolished, anarchists profess to believe that men would voluntarily coöperate in some manner to effect such purposes as could not be secured by individual action. The socialist, desiring to place the control of all industry in the hands of the government, cannot well be an anarchist at the same time. As a matter of fact, socialists and anarchists have antagonized each other most bitterly.

Socialism and anarchism.

§ 316. Some socialists have desired to secure their ends by sudden revolutionary measures. Such ideas have generally been given up, and intelligent socialists now look forward to a more or less gradual socializing of the means of production. At the present time *evolutionary* socialism takes one of two forms: *First*, it is looked upon merely as a gradual extension of existing governmental institutions. Governments already carry on many more branches of activity than people usually realize. One class of socialists,[1] therefore, looks forward to the assumption by the government of one branch of industry after another, as fast as the public can be convinced that

Revolutionary and evolutionary socialism.

[1] This class is represented by the English socialists of the Fabian Society.

such a course is desirable and necessary. The second group is represented by the German socialists, the followers of Karl Marx. They hold that socialism will be the inevitable result of known forces that operate in the economic world. These are the forces of modern capitalistic production. The growing importance of capital in modern machine industry has replaced small-scale by large-scale production. At the present moment trusts and industrial combinations are alleged to be replacing individualistic production on a large scale. In the future all branches of production will be concentrated in the hands of a few monopolies; and then governments will interfere to assume the ownership and direction of all industries.

§ 317. Socialism is not new, but is a very old theory that has reappeared constantly in one form or another, at least since the time of Plato. It has been advanced often when a sharp separation between the classes of rich and poor has brought the problem of poverty to the front. Ideals of political or social equality have been another cause of socialistic theories.[1] Plato's "Republic," with its proposals for the extremest subordination of individual life to the direction of the State, has for its background a sharp separation of classes, and a bitter conflict between rich and poor, that occurred not only in Athens but in most of the Grecian cities. In the sixteenth and seventeenth centuries, the social distress caused by widespread

Socialism a very old theory.

[1] See ROSCHER, I. 237–239, for an interesting statement of the conditions favorable to the growth of socialism.

economic and political changes led to such works as Sir Thomas More's "Utopia" and Campanella's "City of the Sun." Again, in the eighteenth century, the misery existing in France before the Revolution furnished a fruitful field for socialistic speculations. Finally, since the Industrial Revolution, the increased importance of capital has caused a sharper separation of capitalists and laborers, and has furnished the ground for the growth of modern socialism. This movement has been strengthened by the growth of democratic political ideals.[1]

Critical examination of socialism in its relation to the production of wealth.

§ 318. Socialists criticise severely our present methods of producing wealth, and hold that production could be much more efficiently managed under socialism. They urge that competitive methods are "planless." Producers now work at cross purposes; mistakes are common; and our industry is far less productive than it would be if managed on the largest possible scale, in accordance with comprehensive general plans. Secondly, our present competitive methods cause a great deal of waste. Not only have we much unnecessary reduplication of plants, but also needless expenses for

[1] The student would find it interesting to read PLATO's "Republic"; see JOWETT's "Dialogues of Plato," III. There is hardly a better criticism of socialism than that passed by Aristotle upon Plato's schemes; see ARISTOTLE's "Politics," Bk. II., Chaps. 3 and 5. Plato's "Republic" has been called "the fruitful parent of modern Utopias;" and, after studying it, the student might read the socialistic romances contained in MORLEY's "Ideal Commonwealths," especially MORE's "Utopia" and CAMPANELLA's "City of the Sun." Then Mr. BELLAMY's "Looking Backward," the best known of the romances representing modern socialism, might be read in connection with these earlier writers.

advertising, traveling salesmen, and similar purposes. Thirdly, producers have a strong inducement at present to increase the value of their commodities by restricting the output, as is done by the anthracite coal monopoly. Society is poorer on account of the artificial scarcity created in this way. Again, socialists show that there is great waste in our methods of exchanging products. Many more people are engaged in wholesale and retail trade, especially in the latter, than are really needed.

We must admit that there is a great deal of truth in all of these criticisms. But such an admission does not necessarily lead to the acceptance of socialism. For the weakness of socialism is even greater than that of the present system.

Objections to socialism as a scheme for production.

1. First of all, will socialism lead men to exert themselves as actively as they do at present under the desire for pecuniary gain? Socialists urge that the desire for social esteem is a powerful motive at present, and would prove still more so under their system. But while many people are influenced by the desire for social esteem, others, apparently, are not deeply affected by this motive. Moreover, social esteem of one kind or another can be gained at present by many actions that do not conduce to the real welfare of society; and it is not clear that, under socialism, public opinion would so change that men could not gain notoriety in ways that would be thoroughly harmful. Also socialists claim that altruistic motives may be expected to have greater force under a socialistic *régime*. But we have no experience that justifies us in assuming that the majority of

men will, in any immediate future, exert themselves as actively under the influence of such motives as they do at present under the stimulus of self-interest. Of course, the socialistic State might compel men to work. But would such labor be more effective than that of slaves or convicts?

2. The difficulties of organizing and managing all industries on a national scale are enormous. These difficulties would be especially great in industries like agriculture that do not lend themselves readily to large-scale production. Moreover, governmental management presents serious problems, chiefly the difficulty of securing as honest and efficient administration as can be secured by private enterprise, *at its best.* Doubtless our methods of public administration can be improved, and would be further improved before the government should assume the control of industry. But we have no reason to believe that the government could avoid errors, or that, on the whole, it could carry on manufactures and agriculture more successfully than they are conducted at present.

3. Another difficulty that socialism would encounter would be the determination of methods for distributing the labor force among the various employments. Some are much more pleasant or are esteemed more highly than others. Will it be possible for the government to apportion the more important or more desirable positions in such a way as to cause less dissatisfaction than at present? A very important question arises here. By eliminating incompetent persons from the

field of competition we manage fairly well at present to secure able management of industries; and we offer the prospect of exceptional profits as a reward for special efficiency. Will the mass of people living under a socialistic government consent, by their votes or otherwise, to adequate methods of securing able business management? Taking men as we find them at present, this may well be doubted.

§ 319. The main argument in favor of socialism has always been that it would secure a more just distribution of wealth than can possibly be brought about by competition. Socialists have no difficulty in showing that present methods fall far short of securing satisfactory results in many cases. But they have not always agreed as to what constitutes justice in distribution. At present, however, socialists are inclined to hold that equality of income would secure at least approximate justice. Without discussing the principles of distribution according to merit, which were advanced by earlier socialists, it is sufficient to say that equality of income would be the only practicable plan in a socialistic *régime*. The difficulties of having public authorities decide whose merit or whose need is greatest, to say nothing of the difficulty of inducing the majority of the people to assent to such decisions, is a fatal weakness in any plan except that of equality in distribution.

Socialism considered as a scheme for the distribution of wealth.

Now, from a social point of view, equality in distribution is not desirable. Some men have far greater natural abilities than others. Society suffers a seri-

ous loss when a gifted person fails to secure the means of developing his special talents. For this reason it is socially desirable that people possessing superior faculties should have the means of gratifying them; and this implies that they must receive more than less talented persons secure. Our present distribution of wealth may be fairly criticised because it fails to secure to many talented persons the means of developing their faculties, so that they may render the highest service to society. But socialism, with its plan for equality of income, would be still more objectionable.[1] Finally, equality of income would be likely to remove that stimulus to invention and enterprise to which we owe so much of our present economic progress.

Equality in distribution is undesirable.

Socialists might conceivably secure an equal distribution of social income by allotting to all individuals precisely the same amounts of all kinds of commodities. But this would be an impracticable arrangement, since all persons would not want to secure exactly the same things. Accordingly socialists declare that equality of incomes should mean *equality of values*. Then arises the question, How shall these values be determined and expressed?

Difficulty of finding a value denominator under socialism.

[1] Some socialists urge that, under socialism, production would be so large that all men would be able to gratify every rational desire. But nothing could be further from the truth. Our present production, if evenly distributed, could not do more than secure a comfortable, but frugal, living to all. Under socialism there is abundant reason to question whether production would be even as large as it is under our present system.

Socialists say that value should depend upon the "average labor time" required to produce a commodity. Each person should receive his income perhaps in the form of "labor checks" that should entitle him to goods representing so much labor time. We will grant that such a computation of the value of all commodities in terms of units of labor time has been made, although it would be possible to show that the differences between different grades of labor make it impossible to reduce all grades to terms of common unskilled labor. But, assuming that the labor unit is attainable, it could not work as a means of distributing incomes. For two goods may represent exactly the same amounts of labor, and yet one of them may be in much greater demand among consumers. If both are procurable at the same price expressed in terms of labor time, then the supply of the most desirable one will be exhausted immediately. Supply and demand cannot be equalized by fixing prices on the basis of labor time. Market prices must depend upon the marginal utility of the products to consumers. It is impossible to see how supply and demand can be equalized except by changing prices. Labor time is an impossible unit in which to express values.[1]

Concluding considerations.

§ 320. Socialism, therefore, has fatal weaknesses, whether considered as a scheme for the production or for the distribution of wealth. Those who favor it are often persons of the highest

[1] This subject cannot be elaborated here. See ELY, Socialism and Social Reform, 244–247; HADLEY, Economics, 93–96; SCHÄFFLE, Quintessence of Socialism, 77–89.

character, who are influenced by the desire to remedy the admitted evils of our present system. They believe that socialism would have beneficial moral effects, and that it would favor the growth of many of the best and highest elements of our civilization. But, if socialism is an impossible plan for the production and distribution of wealth, we shall have to reject it, although in many other respects it might offer an attractive programme. It may be well, furthermore, to suggest that socialism would probably endanger liberty of thought and action in important respects. With all branches of production in the hands of the government, it would be difficult for any one to criticise the policy of the public authorities. Government officials would have extreme powers of annoying those who criticised their measures. It is doubtful whether a socialistic State would permit an agitation to be carried on against socialism, for instance. At present, people can find in private business a vantage ground from which they may freely criticise men and measures. Would a socialistic government furnish the paper, printing presses, postal facilities, and public halls necessary for free speech and public discussion hostile to itself? In conclusion, it may be said that socialists have often shown themselves to be useful critics of the existing economic order. The student should weigh carefully the criticisms advanced by such writers. While he may have to reject their principal proposals, he should not overlook the useful portions of their writings.

Few people, if any, would care to assert that existing methods of production are above criticism, or that our

present methods of distribution secure exact justice. But this much can be affirmed: private enterprise has been able to increase in a marked manner the production of wealth, and holds out a prospect of continued improvement; the present distribution of wealth has subserved fairly well the highest interests of our civilization, while the laborers, who make up the most numerous social class, have been able to improve constantly their position. Moreover, our present system secures reasonable opportunity for criticism and freedom for experimentation; so that it is possible to try to improve any features that are shown to be unsatisfactory. Rational criticism, enlightened public opinion, and resolute self-reliance in overcoming economic difficulties seem to offer the most practicable method of reforming and reshaping existing institutions. In some directions reform may best be secured by extending the activity of government. Such cases can be dealt with as they arise. We should feel glad to have socialists, or any other persons, point out the weak places of the existing economic order, or offer methods by which improvements can be effected.

The justification of private property and individual enterprise.

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CHAPTER XVI.

THE ECONOMIC FUNCTIONS OF GOVERNMENT.

I. Economic Functions Performed by Governments.

§ 321. Many times in the preceding chapters it has been necessary to explain that the government plays an important part in our economic life, or to discuss the advisability of having the government perform some economic function rather than leave it to private enterprise. Most practical economic questions involve directly or indirectly the question of governmental activity in economic affairs. This subject cannot be avoided by the economist, even if he desires to do so, and it will be desirable to close our introductory study of economics by a brief treatment of the economic functions of government.

Importance of the action of governments.

§ 322. It will be well to summarize the various economic functions which we have found to be exercised by governments at the present time.

The economic functions actually performed by government.

First, governments aim to protect persons and to maintain order. Then they define and protect the rights of property and contract. Personal freedom, private property, and the right of contract are fundamental elements in our economic life.

Fundamental rights.

In order to secure the best results in industrial life, modern governments guarantee individuals the enjoyment of certain privileges. Patent rights, trade-marks, and copyrights are privileges granted in order to stimulate the general activity of the people. Moreover, governments allow individuals to enjoy much freedom in the establishment of industries. This privilege is restricted when the government assumes the management of any enterprise, or regulates the conditions upon which individuals may carry on any business.

Guaranteed privileges.

In the third place, the government regulates the terms of competition in some cases where evil results would be produced on account of the unequal strength of different individuals. Laws regulating the labor contract, regulating rates of interest, regulating freight rates, or providing for the inspection of food products, are examples. These laws limit nominal freedom, but may increase the real freedom of individuals in many cases.

Regulation or equalization of the terms of competition.

Oftentimes governments participate in private enterprises. Such participation occurs when subsidies or bounties are bestowed by the government on private enterprises. These have taken the form of gifts of land and money, as in the United States, where millions of acres of land and millions of dollars of money have been given to aid railroads. Sometimes the subsidy may take the form of a loan. Protective duties are another case where the government gives aid to private enterprises. Again, for works of a

Participation of government in private enterprises.

semi-public character, in which private enterprises must use public streets, or must secure a right of way through private property, the government grants franchises to individuals.

Finally, governments carry on many useful public works, designed wholly or in part to promote industry. Roads, sewers, parks, harbor improvements, consular services, collections of statistics, lighthouses, dikes, coinage of money, sanitary provisions, educational facilities, postal facilities, water works, gas and electric lighting works, street and steam railways, and telegraph and express facilities are important examples. Some of these enterprises could not or would not be carried on by private individuals, because the benefit to the public is intangible or indefinite, and no sufficient return could be secured. Others might be left to private enterprise, and actually are conducted by private individuals in many cases.

Administration of useful public works.

§ 323. Prior to the present century, the governments of Europe had long endeavored to control nearly all branches of economic activity in an extreme degree.[1] This was done from the theory that private enterprise is unable to accomplish many things that society needs to have done, or from the theory that there is a necessary antagonism between private and public interests. Thus it was thought, in the first case, that a nation could

Old and modern views of the economic functions of government.

[1] Nearly the same thing was true in most of the American colonies. The economic life of the people, as well as their social and moral, was thought to need continual regulation.

secure a sufficient stock of money only by regulating foreign commerce so as to make exports exceed imports continually. In the second case, it was believed that business men are likely to make their profits at the expense of the community, and that restrictive laws are necessary to prevent this.[1]

In the year 1776 Adam Smith published his "Wealth of Nations," combating vigorously the restrictive policy of European governments. He showed that private individuals could acquire large profits by supplying some real social need; and that men, in pursuing their own personal interests, were commonly increasing the wealth of the society. Moreover, he proved that many of the restrictions placed upon private enterprise resulted, not in furthering social interests, but in preventing men from serving each other. He argued most ably that the desire of men to promote their individual interests, by establishing business enterprises and trading with their fellows, would usually produce results beneficial to society. He urged that the true way for a nation to become rich is to leave its citizens free to conduct business as they desire.

Adam Smith's views.

Partly through the influence of Adam Smith, partly through other causes, modern thought has favored the view that individuals, in seeking their own economic interests, are regularly promoting the welfare of society.

[1] These theories form a body of economic doctrines known as mercantilism. They have sometimes been condemned too absolutely by modern economists. See SCHMOLLER, The Mercantile System (edited by Ashley), for a more favorable view of mercantilism.

For this reason many of the old restrictions upon the establishment of industries, upon foreign commerce, upon the movements of money, upon the relations of laborers and employers, were abolished during the first half of the present century. Many people were led to the belief that government should have as little to do with economic matters as possible; and held that "*Laissez faire, laissez passer,*" or "leave things free to take their own course," expresses the policy that should be followed.

Modern views of governmental functions. "Laissez faire."

But the old restrictions upon industry were no sooner removed than people felt obliged to resort once more to governmental action to remedy disorders which were found to exist in modern economic life. Factory acts and laws regulating corporations are instances of such action. More recently governments have begun to assume the management of enterprises that are natural monopolies, while the demand is made that more industries shall be brought under governmental control or ownership. This raises one of the most pressing economic problems.

Reaction from the "Laissez faire" policy.

II. Examination of Modern Theories of Governmental Functions.

§ 324. To the question of the proper policy for government to follow in respect to industry, many different answers are given. It will be helpful to classify the various views advanced.

Difference of views on this question.

§ 325. Here, as elsewhere, the anarchists answer that government means control, and control is evil, in and of itself; so that the only proper policy is to abolish all government, and to leave industry to the voluntary actions of individuals. But no anarchist has ever been able to picture a society organized without any control of one person by others. For all anarchists admit the necessity of securing common action by groups, or voluntary associations; and whenever conflicts of interest should arise between groups, the stronger must control the weaker. Therefore anarchism is as illogical as it is impossible.

Anarchism.

§ 326. Extreme individualists resemble the anarchists in considering government an evil. But they regard it as a necessary evil; necessary because of the imperfections in man's moral nature. Men should be left free to do as they please, so long as they do not interfere with the equal rights of others. Government should do nothing except prevent such interference by one person with the equal rights of others. If men ever become moral enough to refrain from molesting each other, government will no longer be necessary. For the present, government should protect persons and property, and enforce contracts voluntarily made by sane adults. Beyond these "police powers" no wise government should go.

Extreme individualism based upon "natural rights."

Extreme individualism is said to be based upon the "natural rights" of man. The principle that "every man is free to do that which he wills, provided he infringes not the equal

Criticism of extreme individualism.

freedom of any other man" is said to be a revelation of what is *naturally* right. But men's ideas of what is *naturally* right differ so widely that most people have come to distrust the reliability of such revelations. Nearly all competent writers agree that our notions of rights are based upon considerations of the good or evil effects of our actions on society, that is, upon social utility. Asserting that a thing is a natural right is merely one way of advancing a personal opinion of what is socially desirable, without supporting the claim by arguments. Therefore we conclude that extreme individualism can be defended solely by showing that it leads to the best results when put into practice. Now, as a matter of fact, nobody has ever been able to put it into actual practice; and we are justified in claiming that it is an impossible theory of governmental action.

§ 327. Most individualists have recognized that the rights of individuals and the functions of government can be determined solely by considering what is most useful to society. Most economists at the present day hold such a view. They believe that the general good of society is the end of all economic organization, and that government should extend its functions into any field of economic activity where the best results can be secured from such a policy. But they believe that *in most cases* the general welfare is best promoted by leaving to the individual a large measure of freedom. They believe in individual enterprise as the rule for economic activity, but favor governmental action whenever it can secure bet-

Individualism based upon the general welfare of society.

ter results in the long run. Views of this sort can be characterized as moderate individualism. They are well stated by Mr. Mill in the following words : —

"But enough has been said to show that the admitted functions of government embrace a much wider field than can easily be included within the ring-fence of any restrictive definition, and that it is hardly possible to find any ground of justification common to them all, except the comprehensive one of general expediency; nor to limit the interference of government by any universal rule, save the simple and vague one, that it should never be admitted but when the case of expediency is strong."

Individualists of this class support their claim that individual freedom leads to the best results in most cases by the following arguments : —

Detailed considerations of the arguments of individualists.

1. They urge that private individuals are likely to know their best interests better than the government can know them, and that there is usually no antagonism between private and social interests. Whenever this is found not to hold true, governmental action is proper. Many cases can be enumerated in which individuals do not know their true interests, while in many instances there may be a direct opposition between private interest and public welfare. But individualists hold rightly that the rule is the other way.

2. Individualists argue that a private *entrepreneur* has a greater personal interest in the success of his undertaking than government officials often feel in pub-

lic enterprises. Furthermore, corrupt administration is liable to creep into public affairs. This argument is easily exaggerated, and it is to be expected that improved political methods may continually decrease the abuses of public administration. Yet something must be conceded to the stronger interest and greater inducements to efficiency experienced in much private industry.

3. Individualists notice that when governments carry on business undertakings, they may fall back upon taxation as a means of making up possible deficits. If a private enterprise is poorly managed, the undertaker will incur constant loss, and will be driven out of business finally. But government enterprises, if badly administered, may fall back upon taxation, in some form or other, to make up the deficits. Hence an inefficient public undertaking which incurs constant loss may not be eliminated from the field of industry, as is the case with private enterprises.

4. Finally, individualists believe that freedom in economic affairs has a great educational influence upon the people of a country. The experience of private business management often furnishes a valuable training in many important directions. Moreover, it is highly desirable that a people should be vigorously self-reliant, and should not be habitually dependent upon governmental action in too many things. Two quotations from Mr. Mill will serve to emphasize these points: "A people among whom there is no habit of spontaneous action for a collective interest, who look habit-

ually to their government to command or prompt them in all matters of joint concern — who expect to have everything done for them, except what can be made an affair of mere habit and routine — have their faculties only half developed; their education is defective in one of its most important branches." "It is therefore of supreme importance that all classes of the community, down to the lowest, should have much to do for themselves; that as great a demand should be made upon their intelligence and virtue as it is in any respect equal to; that the government should not only leave as far as possible to their own faculties the conduct of whatever concerns themselves alone, but should suffer them, or rather encourage them, to manage as many as possible of their joint concerns by voluntary coöperation; since this discussion and management of collective interests is the great school of that public spirit, and the great source of that intelligence of public affairs, which are always regarded as the distinctive character of the public of free countries."

Differences of views among individualists.

Among the economists who might be called individualists of this class there are considerable differences concerning the exact extent of the functions that they desire to see exercised by government. Some of them approve of governmental action in many more cases than others. A second point of difference is found in the terms used to describe governmental action. Those who are inclined to restrict it often refer to "governmental interference in industry," and speak of it as a necessary evil rather

than a positive good. On the other hand, those economists who favor a certain extension of State activity, do not hesitate to affirm that government is a necessary and beneficent factor in economic as in other departments of social life.

The views of the socialists.

§ 328. The views held by socialists concerning the functions of government do not need detailed discussion in this chapter. In general, socialists hold that individual freedom and enterprise in economic affairs usually lead to harmful results, so that the socializing of all branches of industry is the true policy for the government to pursue. Socialists aim at the same end that the second class of individualists have in view, the general good of society. They differ from the individualists in the methods of securing their desired end.

III. The Several Functions of Government Considered from the Point of View of Individualism.

Point of view of this work.

§ 329. The author's belief has been that individualists are right in affirming that, in most economic affairs, individual enterprise and freedom secure results that are most beneficial to society. But, in those cases where individual enterprise is impossible, or where freedom produces evil results that can be obviated by social action, there is a large and important field where governmental activity is beneficent. Governments should be viewed, therefore, as a useful and necessary agency for accomplishing purposes for which individual freedom or initiative is inade-

quate. From this point of view it is proposed to examine briefly the differences of opinion existing among individualists concerning each class of functions exercised by governments.

§ 330. In our classification of the economic functions of government, the definition and enforcement of the rights of persons, property, and contract were placed first. Economists agree concerning the utility of these functions of government. It will appear, however, in the following paragraphs that there are differences of opinion in regard to the extent to which property and contract rights should be recognized.

The first class of governmental functions.

§ 331. Concerning the general expediency of governmental grants of such privileges as patents, trade-marks, and copyrights, economists are substantially agreed. Yet a very large number of writers have called attention to abuses connected with these rights, and have desired a more careful definition or restriction of such privileges. General freedom in the establishment of industries is not called in question except in special cases. These exceptions are, *first*, industries where it is important that persons entering them should have an adequate preparation, such as professions and skilled trades; and *second*, natural monopolies where attempted competition results in needless duplication of plants.

The second class of functions.

§ 332. Few will deny that government should equalize the terms of competition, when there is very serious inequality between the contracting parties, and when it

is clear that governmental regulation will remove the evils that arise from such inequality. Economists hold different views concerning the expediency of some legislation in regulation of competition, because they differ as to the extent of the inequalities between the two parties, or because they doubt the efficiency of the remedies proposed, or because they believe that the contemplated restrictions will have worse social effects than the evils which it is desired to cure. Wise factory legislation and a reasonable control of railroads and local monopolies are favored by most economists.

The third class of functions.

§ 333. Economists are not inclined to favor bounties, subsidies, and protective duties. Such measures mean aiding some industries at the expense of all taxpayers or consumers. This can be justified only when the public necessity or social utility of the favored industry is extremely great. Moreover, such a policy tends to corrupt politics, and to produce many abuses. On the other hand, many business men who stoutly oppose governmental regulation of corporations, of the labor contract, or of freight rates, on the ground that government ought not to meddle with private business, are very willing to favor bounties, subsidies to railroads, and protective duties. Concerning the question of franchises, it may be said that economists hold that valuable privileges of this sort should be paid for by the individuals who receive them, while the public should be guaranteed good service at reasonable rates.

The fourth class of functions.

§ 334. The last class of governmental functions includes, as was shown, two fairly separate classes of useful public works. Roads, sewers, harbor improvements, the publication of statistics, the maintenance of light-houses and dikes, the coinage of money, sanitary precautions, and public education are undertakings in which private enterprise has been proven to be inadequate or productive of bad results. No one but anarchists and extreme individualists would object to the policy of our present government in providing these public works. But there is a doubt as to the expediency of having the government undertake other works that might conceivably be left to private enterprise.

The fifth class of functions.

It is said that the gas and electric light industries, steam and street railroads, and the telegraph and express businesses are suitable fields for private enterprise, and that governments should not interfere with them. The student will understand that the question of the advisability of public or private management of these industries is solely a question of social utility. This will be made clear by considering that many people who oppose public ownership of these enterprises favor the national ownership of the post office and municipal ownership of water works. Those who favor public enterprise in these fields do so because experience has shown that all these industries inevitably become monopolies, and they prefer public to private monopoly. Those who oppose such a policy must admit the tendency to monopoly in these lines of business, and

Governmental control of industrial undertakings.

must show that private management, either with or without governmental control, can assure the best results to society. As a matter of fact, all arguments consciously or unconsciously come to precisely this position sooner or later.

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